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Protective Factors Against Peer and Social Media Sex Messages: The Moderating Role of Parental Influences on African American Emerging Adult Students' Sexual Behaviors

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**PROTECTIVE FACTORS AGAINST PEER AND SOCIAL MEDIA SEX MESSAGES:
THE MODERATING ROLE OF PARENTAL INFLUENCES ON
AFRICAN AMERICAN EMERGING ADULT STUDENTS' SEXUAL BEHAVIORS**

by

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ABSTRACT

PROTECTIVE FACTORS AGAINST PEER AND SOCIAL MEDIA SEX MESSAGES: THE MODERATING ROLE OF PARENTAL INFLUENCES ON AFRICAN AMERICAN EMERGING ADULT STUDENTS' SEXUAL BEHAVIORS

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The most recent research on risky sexual behaviors is primarily based on adolescent, predominately White, or multiple race (e.g., African American and White) samples. There is a paucity of literature focused exclusively on African Americans, particularly African American emerging adults between the ages of 18 and 25. Given the increased risk for sexually transmitted infections (STIs) for college aged African Americans, it is important to understand factors that may decrease engaging in risky sexual behaviors that are specific to this group. The current study examined the roles of parental warmth and communication about sex as protective factors. Participants ($n = 301$) completed a series of questionnaires assessing parental warmth, parental communication about sex, permissive peer sex messages, permissive social media sex messages, and sexual risk behaviors. Hierarchical multiple regression analyses revealed more parental communication about sex (for mothers and fathers) and more maternal warmth during adolescence were associated with less risky sexual behavior for African American college students. In terms of peer influence, more permissive peer sex messages were associated with greater risky sexual behavior, whereas permissive social media sex messages were not. These results highlight the importance of parental and peer influences on the sexual behavior of African American college students. Based on the findings parents and peers should be included in adolescent and emerging adult risk reduction intervention efforts.

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This dissertation is dedicated to my parents Claudia and Reginald Haywood for always pushing me to excel academically, and to the memory of my grandmother, Vivian Newton, who has been with me in spirit throughout my academic journey.

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CHAPTER 1

INTRODUCTION

Interest in reducing college students' sexual risk behaviors is of global importance. Many traditional students attending college are emerging adults (Golonka, 2013). Emerging adulthood is the developmental period between ages 18 and 25 that links adolescence and adulthood (Arnett, 2000). This phase of development is a time of increased autonomy from parents for those who attend college (Chickering, 1969; Chickering & Reisser, 1993) and when peer relationships are strengthened. This period is also a time of increased risk, particularly for high risk sexual behaviors. The Centers for Disease Control and Prevention (CDC) defined high risk sexual behavior as sexual behavior with increased risk of a negative outcome such as contracting or transmitting sexual diseases and unwanted pregnancy (CDC, 2013a). Examples of high risk sexual behavior include having more than one sexual partner, changing sexual partners frequently, or having oral, vaginal, or anal sexual contact without a condom or barrier (CDC, 2013b; Kotchick, Shaffer, Miller & Forehand, 2001). Substance use is also considered a high risk behavior because alcohol and drug use can lower inhibitions, making condom and barrier use less likely for some people (CDC, 2013e).

Sexually transmitted infections (STIs) including Human Immunodeficiency Virus (HIV) present significant public health problems, especially for young people. Individuals between the ages of 13 and 24 accounted for an estimated 26% of all new HIV infections in the U.S. in 2010 and approximately 17% of new U.S. diagnoses were predicted for individuals between the ages of 20 and 24 in 2013 (CDC, 2013a). This risk seems to be even greater for African Americans who are disproportionately affected by STIs (Kennedy, Nolen, Applewhite, Pan, Shamblen & Vanderhoff, 2007; Kennedy, Nolen, Applewhite & Waiters, 2007; Kennedy, Nolen, Applewhite,

Walters & Vanderhoof, 2007). African Americans accounted for an estimated 44% of all new HIV infections among adults and adolescents in 2010, despite representing only 12% of the U.S. population (CDC, 2013c; Humes, Jones, & Ramirez, 2011). As a result, African American adolescents and emerging adults are at the center of the discussion on health disparities related to STIs.

A better understanding of risk and protective factors for risky sexual behaviors is needed to provide quality STI prevention programs and sexual health education services to African American adolescents and young adults. Coley, Medeiros, and Schindler (2008) found that adolescents experiencing less parental negativity and greater regular activities with family, which are related to parental warmth, show fewer sexual risk behaviors (e.g., fewer sexual partners, more consistent condom use) during late adolescence. Other researchers have found similar results which support that parental warmth is related to less risky sexual behavior (Akers, Holland, & Bost, 2011; Hahm et al., 2008; Miller et al. 1999; Regnerus & Luchies, 2006). Additionally, parent-adolescent sexual communication has been linked to later onset of sexual activity, less sexual activity, and more consistent condom use in a mixed race sample (Deptula, Henry, & Schoeny, 2010) as well as African American (DiIorio, Kelley, Hockenberry-Eaton, 1999; Usher-Seriki, Bynum, Callands, 2008) and African American and Latina (Hutchinson, Jemmott, Jemmott, & Braverman, & Fong, 2003) samples. Parental warmth is defined by Bean, Barber, and Crane (2006) as the level of acceptance or kindness that parent(s) express toward their children, whereas parental communication about sex are safe sexual behavior discussions between parents and their children (Hutchinson & Montgomery, 2007).

Peer influence is another factor that has been investigated and deemed important to sexual risk behaviors. Busse, Fishbein, Bleakley, and Hennessy (2010) found that having

conversations with friends about sex influences intentions to initiate sexual intercourse. Other researchers have found that teenagers appear more likely to have sex or to initiate sexual activities when they think their peers are having sex (Kinsman, Romer, Furstenberg, & Schwarz, 1998; Kirby, 2002; Magnani, Seiber, Zielinski Gutierrez, & Vereau, 2001; Romer et al., 1994; Stanton et al., 2002; Upadhyay & Hindin, 2006). Indeed, permissive peer sex messages, or messages from peers that promote sexual behavior, are consistently identified as a factor in risky sexual behavior, but less is known about permissive peer social media messages. It is important to consider the latter because emerging adults often become more active on social networking sites (SNS), with SNS use increasing for this group from 9% in 2005 to 89% in 2012 (Brenner & Smith, 2013). Research suggests that 72% of African Americans between the ages of 18 and 24 use SNS regularly, with 45% using them daily (Lenhart, Purcell, Smith, & Zickuhr, 2010). Young and Rice (2011) found that viewing sexually suggestive photos and talking about drugs through SNS were linked to greater risky sex for homeless adolescents and young adults (13 to 24 years of age). This is an emerging field of inquiry and it is important to assess the potential impact of SNS use on behavior and investigate if permissive peer sex messages via SNS increase our understanding of sexual risk for this population.

Research on sexual risk among emerging adults, especially among minorities, has been sparse over the past several years and the focus of this project was to examine previously studied risk and protective factors for African American college students as well as the role of social media use. African Americans are an important group to study because of the heightened risk for STIs during emerging adulthood for this population (CDC, 2013c; 2013d). This study focused on how two parental protective factors (parental warmth and parental communication

about sex) influence the relationships between permissive sex influences (peer and social media sex messages) and risky sexual behavior.

Increased Risk of HIV for African Americans

Understanding sexual risk factors for African Americans is important because they are the racial/ethnic group most affected by HIV (CDC, 2013d). The CDC estimates 21,836 African Americans were diagnosed with HIV in 2013, compared to 13,101 Whites and 10,117 Hispanics (CDC, 2013c). In 2010, the estimated rate of new HIV infection for African American men was seven times greater than the rate for White men, and the rate for African American women was 20 times greater than the rate for White women (CDC, 2013d). It is projected that a staggering number of African American women and men will acquire the virus throughout their lifetimes, specifically, 1 in 16 men and 1 in 32 women (CDC, 2013b).

African Americans have been disproportionately infected with STIs for the last several decades. Following the sharp increase in HIV infections in the late 1980s through the late 1990s (Karon, Fleming, Steketee, & De Cock, 2001; Zierler & Krieger, 1997) deaths from weakening health and illnesses connected to Acquired Immune Deficiency Syndrome (AIDS) rose to the first and second leading causes of death for 25 to 44 year old African American men and women, respectively in 2000 (Bazargan, Bazargan, Husaini, Kelly, & Stein, 2000). Of significance and related to the increased rates of HIV infections are the high rates of other STIs among this population. In 2005, African Americans represented 12% of the U.S. population, but accounted for 76% of gonorrhea cases and 71% of syphilis cases (Cherry, Robinson, & Scheltema, 2005). Having a history of an STI is associated with greater risk for HIV infection (CDC, 2013e) which highlights the importance of understanding what influences sexual risk behaviors.

One major factor contributing to the high rates of negative sexual health outcomes for African Americans is stress. Researchers have found that African Americans are exposed to greater stress, specifically, greater exposure to perceived racial discrimination (Brondolo et al., 2009; Harrell, 2000; Sellers & Shelton, 2003). In a study of 1,555 African American college students 25% reported high levels of stress, which they attributed to their experiences with racial/ethnic discrimination (Chao, Wei, & Mallinckrodt, 2012). Additionally, Williams and Mohammed (2009) found that a review of the literature on racial discrimination and health suggests African Americans continue to report high negative health outcomes as a result of higher levels of overall stress.

Youth and Emerging Adults' High Risk Sexual Behavior

Data suggest certain age groups are disproportionality at risk for STIs (CDC, 2013a; CDC, 2013b; CDC, 2013c). Youth (ages 13 to 24) in the U.S. account for a substantial number of new HIV infections. In 2010, 13 to 24 year olds made up 17% of the population, but accounted for an estimated 26% of all new HIV infections (CDC, 2013a). Among all youth in the U.S., African Americans accounted for an estimated 57% of new HIV infections, followed by Hispanic /Latinos (20%) and Whites (20%; CDC, 2013b). In 2013, an estimated 9,961 youth and young adults were diagnosed with HIV in the U.S., with 81% percent of youth diagnoses occurring in those aged 20 to 24 (CDC, 2013c). Moreover, from 2006 to 2009 the highest rate of new HIV diagnoses across all age groups was among those 20 to 24 years old (CDC, 2013a).

Emerging adults' involvement in sexual activities is normative, with 70% of people having had sex by age 19 (Martinez, Copen, & Abma, 2011). Often, these sexual experiences include high risk behaviors including multiple sex partners, inconsistent condom use, high rates of sexual activity, and substance use during sexual activity, which increases risk for STIs

(Aicken, Nardone, Mercer, 2010; Bersamin, Paschall, Saltz, & Zamboanga, 2012; Snipes, & Benotsch, 2013). Additionally, the largest group of women having abortions are in their 20s (Jones, Finer, & Singh, 2010; Pazol, Creanga, Zane, Burley, & Jamieson, 2012) with 25% of U.S. women reporting having had an abortion by age 30 (Jones & Kooistra, 2011) suggesting that high risk sexual behaviors may be frequent in this population.

College students also engage in casual sex, or intercourse outside of a committed relationship (e.g., Desiderato & Crawford, 1995; Leigh & Schafer, 1993), which puts them at greater risk for STIs (Chambers, 2007; Young & Jordan, 2013). Emerging adults today overall are more likely to engage in a range of physically intimate behaviors (e.g., passionate kissing, oral sex, and vaginal or anal intercourse) outside of a committed relationship without the expectation of future encounters which they label, “hooking up” (Glenn & Marquardt, 2001; Owen, Rhoades, Stanley & Fincham, 2010; Paul & Hayes, 2002; Paul, McManus, & Hayes, 2000). Hooking up is particularly popular on college campuses (Allison & Risman, 2014; LaBrie, Hummer, Ghaidarov, Lac, & Kennny, 2014; Lewis, Atkins, Blayney, Dent, & Kaysen, 2013; Siebenbruner, 2013) and it is estimated that anywhere between 79% and 85% of college students have engaged in a hook up (Littleton, Tabernik, Canales, & Backstrom, 2009; Owen & Fincham, 2011). A recent qualitative study of African American men aged 18 to 24 found that many of the participants’ sexual activities occurred outside of a relationship as quickly arranged hook ups (Adefuye, Kennedy, Amuwo, Nolen, & Sayad, 2015). Given this information it is important to learn more about the sexual behaviors of African American college students and if differences in sexual behavior exist among this sample and their emerging adult peers.

African American College Students' Sexual Behaviors and Outcomes

While African American college students engage in risky sexual behaviors, there are studies which suggest that African American college students and graduates look differently from their same aged non-college educated peers in regards to sexual risk behavior and negative outcomes from such behavior (Painter, Wingood, DiClemente, DePadilla, & Simpson-Robinson, 2012; Shegog, Lindley, Thompson-Robinson, Simmons, & Richter, 2012). Painter and colleagues (2012) explored the association between amount of education completed and a negative sexual health outcome (e.g., testing positive for STIs) for African American women ($n = 848$) between the ages of 18 and 29. Their findings suggest having an STI diagnosis was 73% lower for African American female participants who had graduated from college in comparison to those who had not received a high school diploma. There are several factors associated with educational attainment that may serve as protective factors against transmission of STIs. Educational attainment is linked to greater earning potential. DePadilla, Windle, Wingood, Cooper, and DiClemente (2011) found receiving public assistance, being unemployed, and other economic risk factors were associated with fewer condom negotiation skills (e.g., techniques on discussing and/or initiating safe sex with a partner). Wingood and DiClemente (2002) also found that limited knowledge of HIV prevention, having older sex partners, and having multiple sex partners are negatively associated with education attainment. Therefore, African Americans college graduates, who have succeeded academically, have perhaps a lower risk for negative sexual health outcomes compared to their emerging adult peers with less formal education.

Variations in substance use have been associated with differences found between African American and White college students, in terms of risky sexual behaviors. Although alcohol is typically a risk factor contributing to unsafe sex within collegiate populations (Chen, Dufour &

Yi, 2004; Wechsler, Lee, Nelson, & Kuo, 2002) one study on African American college students from a historically Black colleges and university (HBCU) found that this population holds more negative associations with alcohol use, and binge drink less than the general college population (Wechsler, Moeykens, Davenport, Castillo, & Hansen, 1995). Binge drinking, or consuming excessive amounts of alcohol during a short period, is a predictor of risky sex (Hess, et al., 2015; Townshend, Kambouropoulos, Griffin, Hunt, & Milani, 2014) as is marijuana use (Weller & Halikas, 1984). African American college students report lower levels of heavy drinking than White students (Chen et al., 2004; Wechsler, Lee, Nelson, & Kuo, 2002), and have a greater number of “protective behaviors,” such as eating before drinking, and counting drinks consumed (Siebert, Wilke, Delva, Smith, & Howell, 2003). Also, based on U.S. national survey data on marijuana use, African American college students from 140 colleges were found to engage in less marijuana use in comparison to their White student peers (Bell, Wechsler, & Johnston, 1997).

Although there are factors unique to the experiences of African American college students and graduates that may lead this group to engage in less risky sexual behavior when compared to African American emerging adults at large or White students, there are also data to suggest the former are still at high risk. Winfield and Whaley (2005) conducted a study that found 63% of a sample of sexually active African American college students never, or sporadically use any type of contraception or condom. Much of the available data on this topic is primarily focused on sexual risk factors and not on protective factors. The purpose of this study is to develop a greater understanding of protective factors for decreasing sexually risky behavior among African American emerging adults.

Parental Influences on Adolescent Health and Behavior Outcomes

Parents have tremendous influence on adolescent outcomes. Adolescents who perceive their parent-adolescent relationship as positive engage in fewer problem behaviors and have fewer mental health problems (Hair, Moore, Garrett, Ling, & Cleveland, 2008). Researchers have found high quality parent-adolescent relationships predict lower levels of adolescent depression (Aseltine, Gore, & Colten, 1998) and delinquent behaviors (Mason, Cauce, Gonzales, & Hiraga, 1996). Further, parental support has been found to predict fewer psychological disorders, externalizing behaviors, and behavior problems among youth (Aseltine et al., 1998; McLoyd, 1990). Steinberg and colleagues (1991) surveyed high school students across different ethnicities, socioeconomic statuses, and parental marital statuses and found that adolescents with parents who are accepting, firm, and democratic earned higher grades in school, were more self-reliant, and reported less anxiety and depression. Parental support and behavioral control have also been found to be related to fewer problem behaviors in adolescents (Barber, Olsen, & Shagle, 1994; Maccoby & Martin, 1983; Schaefer, 1965).

Parental support also plays a role in adolescent sexual behavior. There are robust findings that positive parental influences serve as a strong protective factor against risky behavior and negative health outcomes among adolescents and young adults (Aseltine, Gore, & Colten, 1998; Depulta, Henry, & Schoeny, 2010; DiClemente et al., 2001a; Hair, Moore, Garrett, Ling, & Cleveland, 2008; Jerman & Constantine, 2010; Mason, Cauce, Gonzales, & Hiraga, 1996; McLoyd, 1990; Steinberg et al., 1991). Moreover, the literature on adolescent development suggests two main factors are associated with a decrease in risky sexual behavior: parental warmth and parental communication about sex (Depulta, Henry, & Schoeny, 2010; DiClemente et al., 2001b; Jerman & Constantine, 2010).

Parental Warmth and Sexual Behavior

An atmosphere of honesty and openness in the home, and reasonable rules about dating and relationships are important factors associated with adolescents delaying sexual activity (Akers, Holland, & Bost, 2011; Hahm et al., 2008; Regnerus & Luchies, 2006). Authoritative parenting during early adolescence, which includes high levels of warmth and parental control, has been associated with later sexual initiation, fewer sexual partners, and more consistent condom use during late adolescence (Miller et al., 1999) and early adulthood (Kan et al., 2010). For example, Hoskins and Simons (2015) conducted a study predicting sexual behaviors and negative outcomes from the longitudinal data of 305 African American females ($M = 10.5$ years). They found that greater authoritative parenting was negatively associated with adolescent females' participation in risky sexual behavior. In addition, Crosby and colleagues (2001) found that African American adolescent females living with mothers who provided parental support reported increased communication about sexual risks with partners, fewer casual sexual relationships, and increased use of protection when engaged in sexual behavior with a steady partner. Parental support is often used synonymously with parental warmth and is generally conceptualized as the level of acceptance or kindness that parents express toward their child(ren) (Bean, Barber, & Crane, 2006). Adolescents who perceive their parents as supportive and are satisfied with the parent-adolescent relationship tend to engage in less risky sexual behavior (Coley et al., 2008; Karofsky, Zeng & Kosorok, 2001; Luster & Small, 1994; Resnick, et al., 1997; Scaramella, Conger, Simons, & Whitbeck, 1998).

More recent research conducted by Gillmore and colleagues (2011) found that family support during adolescence, measured by the extent to which participants believed their family members enjoyed, loved, and cared about one another, was positively related to using condoms

in later adolescence and early adulthood for 10,131 participants between the ages of 11 and 27.

The study analyzed data from the National Longitudinal Study of Adolescent Health, a nationally representative, school-based study exploring health related behaviors at several different waves (e.g., Wave 1 age 11-21 years, $M = 15.6$ years; Wave III age 18-27 years, $M = 21.9$ years).

They also found that African American adolescents reported more parental support than White adolescents (Gilmore et al., 2011). Their findings support similar research that has found ethnic/racial and gender differences regarding parental warmth and support (Roberts et al., 2012).

Research also suggests adolescents coming from close and warm families are more likely to use contraceptives (e.g., condoms) when engaging in sexual activity (Halpern-Felsher, Kropp, Boyer, Tschann, & Ellen, 2004; Zimmer-Gembeck & Helfand, 2008). For example, Weinman and colleagues (2008) conducted a study with a majority (75%) female sample, with a mean age of 18.5 years. They found that African American adolescents in supportive families were 50% less likely than adolescents in non-supportive families to report unprotected sex in the last 30 days, or to report sex with a non-steady partner in the last six months. Further, good parent-adolescent communication and emotional support predicted less accepting attitudes toward risky sexual behaviors (Kogan et al., 2013) and increased condom use among African American adolescents (Chase-Landsdale, Brooks-Gunn, & Zamsky, 1994). Altogether, there are robust findings that parental support (measured as warmth, closeness, and attachment) has an inverse relationship to risky sexual behavior for adolescents (Fingerson, 2005; Kan, Cheng, Landale, & McHale, 2010; Manlove, Ikramullah, & Terry-Humen, 2008; Wight, Williamson, & Henderson, 2006), but more studies are needed for emerging adults and African Americans.

Recent research on family processes and adolescent sexual behavior provides evidence that a family-based prevention program, the Family Check-Up (FCU) intervention (Dishion & Kavanagh, 2003; Dishion & Stormshak, 2007), helps reduce adolescents' high risk sexual behavior by improving the parent–adolescent relationship, which includes fostering parental warmth (Caruthers, Van Ryzin & Dishion, 2014). Caruthers and colleagues (2014) conducted a longitudinal study with a community sample of 998 Black and White adolescents and their families. Data were collected over several waves, from ages 12 to 22. The FCU's goal is to support family engagement by using surveys, feedback, and videotaped observations of family interactions to motivate parents to improve their parenting practices by enabling positive behavior support and relationship building (Caruthers, Van Ryzin & Dishion, 2014; Dishion and Kavanagh 2003; Dishion & Stormshak, 2007). Caruthers et al. (2014) found that the FCU intervention predicted significant positive changes in the quality of family relationships, which was associated with the reduction of high risk sexual behavior of participants over time. Given these findings, family relationship quality seems to serve as an important factor in reducing high risk sexual behavior in young adulthood for African Americans. This supports the notion that earlier family relationships can have a significant impact on young adults' sexual behavior, with early positive parental relationships likely linked to safer sexual behaviors.

As seen above, most literature on parental warmth has focused on negative and positive outcomes of the quality of the parent-adolescent relationship. However, parental warmth is not only important during early or mid-adolescence; it has also been associated with late adolescent and even adult behaviors. Hair and colleagues (2008) conducted a longitudinal study with a nationally representative sample of adolescents using data from the National Longitudinal Survey of Youth. The researchers found that the influence of a positive parent–adolescent

relationship matters, even for older adolescents beginning the transition to young adulthood. Therefore, basic feelings of parental support during late adolescents (e.g., parental warmth) may be highly important to emerging adults' sexual decision making.

African American College Students and Parental Warmth

Kenny and Rice (1995) conducted a review of the literature assessing the relationship between quality of parental attachment and late adolescent adjustment, noting that most studies have been focused on White, middle-class college students with a paucity of literature existing on ethnic minorities, including African Americans. Based on the scarce amount of literature available on this population they determined it is likely that first year African American college students benefit from positive parent-child relationships. Kenny and Rice (1995) highlight that findings from a few studies suggest "the emotional well-being of African American youth (and young adults), for example, may be particularly sensitive to the influence of family relationships" (p. 447). Two studies found that African American adolescents reported higher levels of perceived intimacy with their parents than White adolescents (Cernkovich & Giordano, 1987; Giordano, Cernkovich, & DeMaris, 1993). Additionally, Giordano and colleagues (1993) found that African American adolescents maintained more intimate relationships with family members than with peers throughout the adolescent period. Wright (1984) states that "the importance of relationships is likely responsible for minority college students maintaining close ties with primary or extended family members and turning to their family for support and assistance in problem resolution" (p. 447).

Kane and Erdman (1998) completed a study on perceived family support of college students. When Whites and Hispanics were compared to African American college students, African American students rated their families as most encouraging and supportive of their

individual development. In another study that compared African American college students to White students, the former reported valuing their relationships with parents more strongly, with their maternal relationship valued as most significant (D'Augelli & Hershberger, 1992). Kane (1998) compared positive family factors of Asian American, Hispanic American, and African American graduate and undergraduate students. They found that African American college students rated their families significantly higher than Asian and Hispanic American students on a scale measuring intimacy. The intimacy scale assessed a range of feelings, moods and tones, conflict resolution, empathy, and trust built within the family system, which is primarily exercised through the parent-child relationship. However, much of this research is dated and there is a need for studies to affirm that positive parent-child relationship factors such as parental warmth continue to be important for African American college students. Given increases in STIs for African American emerging adults over time (CDC, 2013c) and findings that African American college students report greater parental warmth when compared to other groups (D'Augelli & Hershberger, 1992; Kane, 1998; Kane & Erdman, 1998), it is important to understand whether parental warmth is a factor that may help explain why some African American college students are less likely to engage in risky sexual behaviors.

The Influence of Parental Communication about Sex

Parents influence adolescent sexual behaviors through parent-adolescent communication about sex (DiClemente et al., 2001a; Dilorio, Kelley, & Hockenberry-Eaton, 1999; Durta, Miller, & Forehand, 1999; Harris, Sutherland, & Hutchinson, 2013; Hutchinson & Montgomery, 2007). DiClemente and colleagues (2001b) examined associations between parent-adolescent communication about sex-related topics and sexual practices for 522 African American sexually active females ages 14-18. Results suggest that less frequent parent-adolescent communication

about sex is associated with African American adolescents' non-use of condoms or birth control and lower self-efficacy to negotiate safer sex. Leland and Barth (1993) found that high school adolescents ($n = 1,033$) of multiple races, but primarily White, who had conversations about sex with their mothers were less likely to report being sexually experienced, and, if they were sexually experienced, reported fewer sex partners and more frequent condom use. In another study of African American and Latina/Hispanic adolescent females, higher levels of mother/daughter communication about sexual risks were associated with fewer episodes of unprotected sexual intercourse (Meneses, Orrell-Valente, Guendelman, Oman, & Irwin, 2006). Weinman, Small, Buzi, and Smith (2008) found that female adolescents who reportedly had a "good talk" with parents in the last year about sex, birth control, and the dangers of STIs were twice as likely to use condoms the last time they had sex compared to teens who did not talk to their parents in the last year. Further, female adolescents who talk with their mothers about sex related topics may be more likely to talk with male partners about such topics (Durta, Miller, & Forehand, 1999). Partner communication about sex-related topics is important because studies have shown it increases the likelihood of condom use (DiClemente, 1991; DiClemente et al., 1996).

Studies investigating parental communication about sex and African American adolescents have found evidence that parents exert significant influence (Deptula, Henry, & Schoeny, 2010; Jerman & Constantine, 2010). Jerman and Constantine (2010) examined the content, extent, and comfortability of sexual communication between parents and adolescents (ages 8 to 18) for a sample of several races including African Americans, Whites, and Hispanics. They found that parental comfort, knowledge, and sexual communication strongly predicted the number of topics discussed during parent-adolescent communication about sex for African

Americans. Deputula and colleagues (2010) used a nationally representative sample with information about adolescents and parents to examine if specific parenting factors were associated with sexual risk, including parental communication about sex. They found that the more parents reported communicating about risks associated with sexual activity in their sexual communication the greater the likelihood the adolescents would use condoms when initiating sex.

There are some studies that have examined African American college students, specifically. Hutchinson and Montgomery's (2007) study of 488 African American college students found that greater parent-teen sexual risk communication (PTSRC) with mothers and fathers was associated with reports of closeness with parents at the time of the study and during their high school years. Also, for the females in their sample, those who reported PTSRC with their mother were approximately 62% less likely to report ever having been pregnant and greater PTSRC was associated with less perceived difficulty in discussing sexual topics with partners for both males and females (Hutchinson & Montgomery, 2007).

Heisler (2005) completed a study focused on understanding what topics male and female college students and their parents retrospectively recalled during parent-adolescent communication about sex. Participants completed a questionnaire that prompted them to think about previous family discussions about sexuality and relationships, and then were asked to list all topics related to sexuality that they recalled discussing. Participants consisted of 176 mother-father-student triads. Similar to studies cited above on parent-child communication about sex, parents and college aged students from Heisler's study remembered talking about sex and sex related issues. In fact, 77% of the participants remembered having at least one conversation. The most frequently recalled topics were relationships, morals, and pregnancy. Additionally, the

participants in the study had an average age of initial sexual intercourse that was older than the national average, leading researchers to support the idea that parental communication about sex is associated with delayed sexual onset. Gillmore and colleagues (2011) explored if parental communication about sex continues to protect adolescents as they transition to late adolescence and early adulthood. For this study the researchers found racial differences among reports of parent-adolescent communication about sex. Their results suggest that African Americans are more likely than other racial groups (e.g., Whites, Chinese Americans, Mexican Americans) to discuss sexual matters with their children (Gillmore, Chen, Haas, Kopak, & Robillard, 2011).

In summary, there are robust findings that adolescents who have a warm and open relationship with parents and who have parents that communicate with them about sex, particularly encouraging abstinence or low risk sexual behaviors, are less likely to engage in risky sex. However, given the high rates of STIs among emerging adults, it is important to consider other influences on sexual risk and one area of investigation involves the impact of peers. This is particularly important because as adolescents begin emerging into adulthood they become more autonomous from parents and peer messages may become particularly salient.

Peer Influence on Sex Behavior

Although parents continue to have an influence on their children during adolescence, peer group influence becomes increasingly important during this time (Steinberg & Monahan, 2007). Adolescents' intentions to engage in sex have been found to be strongly influenced by their social context in which peers play a major role in determining normative behavior (Sieving, Perry, & Williams, 2000). For instance, results from a national survey indicated that adolescent females had an increased risk of pregnancy when they had friends who were sexually active or pregnant (Bearman & Bruckner, 1999). Busse and colleagues (2010) found that adolescents

were more likely to report having had sex one year later when they reported more frequent sexual communication with friends, including discussions about sexual behavior, STIs, and birth control. In addition, more frequent peer sexual communication overall was associated with feeling more pressure to have sex, which in turn, predicted sexual initiation (Busse et al., 2010). Further, studies focused on African American adolescents have found an association between peer norms, sexual attitudes, and sexual behaviors (Landor, Simons, Simons, Brody, & Gibbons, 2011; Wallace, Miller, & Forehand, 2008).

Many studies examining peer influences on sexual attitudes and behaviors focus on the contributions of peer perceptions or peer sexual norms (e.g., Lewis, Lee, Patrick, & Fossos, 2007; Potard, Courtois, & Rusch, 2008; Wallace et al., 2008). According to Ajzen (1991) beliefs about the behaviors of others as well as ideas about if others will accept certain behaviors help create perceived norms. Research has demonstrated that both adolescents and young adults perceive that their peers engage in more high risk sexual behavior (Chernoff & Davison, 2005; Gibbons, Helweg-Larsen, & Gerrard, 1995; Martens et al., 2006; Scholly, Katz, Gascoigne, & Holck, 2005; Seal & Agostinelli, 1996) and use less protection (i.e., condoms) during sexual activity than they themselves do (Chernoff & Davison, 2005; Scholly et al., 2005). Perceived norms have been found to have significant effects on behavior. For instance, Wallace and colleagues (2008) studied African American youth nine to 12 years in age and found that adolescents who perceived their peers as not engaging in sexual intercourse were less likely to have had sexual intercourse and had fewer thoughts about sexual intentions. Perceived norms have also been connected to emerging adults' alcohol and marijuana use, with perceptions of peer use and peer attitudes toward drinking and using drugs influencing both alcohol (Borsari and Carey, 2001; Lewis & Neighbors, 2004) and marijuana consumption, with consumption

leading to greater risky sexual behavior (Baer, Stacy, & Larimer, 1991; Lee, Geisner, Lewis, Neighbors, & Larimer, 2007; Mallett, Bachrach, & Turrisi, 2009).

College students receive messages from one another which helps to establish what sexual behavior is normative among peers (Perkins 2002). Normative perceptions of sexual behavior have been found to contribute to college students' choices to engage in high risk sexual behavior (i.e., multiple partners, sexual intercourse without protection, having sex while intoxicated, etc.) (Lewis et al., 2007). Lewis and colleagues (2007) found that undergraduate male and female students of multiple races perceived that their peers engaged in a great amount of risky sexual behavior and perceived norms were positively associated with their own sexual behavior. Further, in a cross-sectional study, undergraduate females who frequently discussed sexual feelings and behaviors with their same-sex best friends were more likely to be sexually active than females who discussed these topics less frequently (Lefkowitz & Espinosa-Hernandez, 2007). Undergraduate females who reported higher levels of comfort and openness during discussions about sex with friends were also more likely to be sexually active than undergraduate females who reported lower levels of comfort and openness (Lefkowitz & Espinosa-Hernandez, 2007).

College students spend a great deal of time with peers. Undergraduates report spending about 23 hours per week within peer systems (Finlay, Ram, Maggs, & Caldwell, 2012). Trinh (2014) suggests regular contact with peers likely fosters more frequent, comfortable, and candid communication about topics of sex and relationships. In addition, peer networks serve as a common site for the formation of sexual relationships (Cavanagh, 2007; Connolly, Furman, Konarski, 2000; Kuttler & La Greca, 2004; Zimmer-Gembeck, 2002). Approximately 72% of college students report that they have identified potential romantic partners while interacting

with friends (Ackerman & Kenrick, 2009). Taken together, peer networks provide great opportunities to learn either positive/ healthy sex messages or permissive sex messages.

In a qualitative study, Trinh (2014) found that approximately 92% of the heterosexual women in their collegiate sample of 566 people reported receiving messages about sex and relationships from peers. Young women received messages that promoted diverse sexual values and beliefs, with messages from female friends often illustrating how to be a “Good Girl” or a “Pleasing Woman” and messages from male friends promoting “hook ups,” “sexual pleasure,” and “sexual enjoyment.” Findings from Trinh (2014) suggest that college students receive messages about sex from peers, with peers being uniquely situated to influence their sexual behaviors and attitudes. Similarly, Holman and Sillars (2012) found that male and female college students overestimated how often peers “hook up,” especially for students who talked more regularly about causal sex with their peers. They also found that students with stronger relationships with peers, receiving more frequent permissive peer messages about sex predicted more hook ups.

How Parents Impact Peer Influence on Sex Behavior

DiClemente and colleagues (2001a) found that authoritative parents who monitor and are involved with their adolescents are more attuned to the peers their child associates with. Additionally, being an involved parent allows for more parental knowledge of adolescents’ whereabouts and allows more parental control over peer influences (Hoskins & Simons, 2015). Parental monitoring plays a central role in determining associations with deviant peers, which in turn predict adolescent risk behaviors (Dishion, Capaldi, Spracklen, & Li, 1995). Scaramella et al. (1998) found that this conceptualization also extends to risky sexual behavior. Affiliation with a deviant peer group was a mediating mechanism that explained the link between poor

quality parenting and risky sexual behavior. Further, low levels of parental monitoring increased females' risk of adolescent pregnancy primarily by failing to limit offspring's affiliation with deviant peers. A similar pattern was found for African Americans (Roberts et al., 2012). Lastly, Metzler, Noell, Biglan, Ary, & Smolkowski (1994) found that when parents do not have a supportive relationship with their adolescents there is often an increase in peer influence on sexual behavior. A recent study by Hoskins and Simons (2015) found that African American females ($M = 10.5$ years) who affiliated with peers who participated in risky sexual behavior were more likely to engage in high risk sexual behaviors themselves. However, involved, supportive parenting was negatively associated with females' affiliation with a peer group who engages in risky sexual behavior, which in turn, had a direct effect on females' high risk sexual behaviors. Results indicate that parents continue to exert influence in their children's lives as they move through adolescence. Specifically, authoritative parenting, which includes monitoring behaviors and providing support, was directly related to less risky sexual behavior. Authoritative parenting also had an indirect effect to peer group affiliation. Taken together, this evidence indicates that the negative sexual influence of peers can be buffered when parents engage in strategic monitoring and are supportive of their children.

Fletcher et al. (2015) conducted a study with African American undergraduate students examining parents and peers messages about sex. They found that parents emphasized less permissive sexual messages and more messages focused on abstinence and sex within a monogamous relationship compared to peers. In contrast, peers communicated more permissive sexual messages which deemed sexual behavior more acceptable and normative. Greater exposure to abstinence messages from parents predicted lower levels of sexual experimentation

while greater sex positive messages from peers predicted higher levels of sexual assertiveness experienced with a sexual partner.

Although there is support that parents have an effect on peer influences that leads to lower risky sexual behavior, there are conflicting findings in the literature. Lefkowitz and Espinosa-Hernandez (2007) found that Black and Hispanic male and female freshmen college students' quality of communication with close peers was more strongly associated with sexual experience in comparison to communication with mothers. They also found that students reported engaging in sexual communication with their close peers more often than their mothers over the last three months. The students reported feeling more comfortable and open about sexual topics with their peers than with their mothers. Overall, few studies have evaluated both peer and parental influences on sexual behavior outcomes of African American college students. There is a need to differentiate which influence plays a greater role for this group.

Social Networking and Emerging Adults

As students enter college years (emerging adulthood) they not only become more autonomous (independent from their parents) and engage in more interactions with peers (Chickering, 1969; Chickering & Reisser, 1993), but they also become more active on SNS (Brenner & Smith, 2013). For many adolescents and adults in the U.S. social networking is a vital part of daily life (Cookingham & Ryan, 2015). Holloway and colleagues (2014) describe online social networking as the use of internet based technologies that enable connection and communication between users. Individuals who use SNS do so through a computer or mobile device (e.g., tablet, smartphone, etc.; Holloway et al., 2014). Boyd and Ellison (2007) define SNS as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a

connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site” (p. 211).

According to Duggan and Smith (2013), a comprehensive overview of cell phone and online social media use reports show that for those over 18 years of age who use only one SNS Facebook is most popular with about 71% of U.S. adults using the site, 63% of users visiting the site daily, and 40% visiting multiple times per day. About 50% of adults use multiple SNS including Instagram, Pinterest, Twitter, and Snapchat. They also report that Instagram and Twitter have experienced increases in online usage since 2012, with nearly 60% of Instagram users and 50% of Twitter users checking these sites daily. Additionally, almost 75% of all internet users in the U.S. use at least one SNS and over 40% use two or more sites. Although SNS use has grown remarkably as a whole in the U.S., young adults ages 18 to 29 were found to be the most frequent SNS users in 2013 (Pew Research Internet Project, 2013), with 89% of this population reporting use (Brenner & Smith, 2013).

A study by Whitely and colleagues (2011) shows support that African Americans have increased their cell phone and social media use. They found that over 90% of African American adolescents (13 to 18 years old) they sampled used their cell phones daily and 60% used SNS nearly every day. Based on reports found in Duggan and Smith (2013), cell phone owners between the ages of 18 and 29 are much more likely to use their cell phones to go online in comparison to other demographic age groups, with 85% of this group being frequent online cell users. African Americans adults are the most active users of the mobile web with 74% of all African American cell phone owners also being mobile web users. Interestingly those who have some college education and college graduates have been found to have much higher online cell

use in comparison to those less educated. Likewise, African Americans' Instagram and Twitter usage increased from 13% to 18% between 2012 and 2013. These data highlights the growing popularity of cell phone use, which is likely highly associated to SNS use. Based on the data it can be concluded that African Americans likely frequent SNS more regularly due to their high online cell phone use and increased use of certain sites. With rates of use increasing there is a need to understand attitudes and behaviors associated with SNS use.

Social Networking Compared to Peer Networks

With SNS use increasing in popularity, scholars have tried to understand what this increase means for its users. Some have argued that the social networking environment serves as an extension to established direct peer interactions, and others have argued that it has replaced direct peer interactions (Zhang & Leung, 2014). Online SNS can help to maintain social ties, including peer relationships, and foster an environment to easily create new peer connections (Ellison, Steinfield, & Lampe, 2007). Much of the early research on online social communities assumed that individuals using these systems would be connecting with others outside of their connected peer group, due to networks enabling users to form communities around shared interests (Wellman, et al., 1996).

According to Boyd and Ellison (2007) SNS are used to bridge online and offline social networks. Lampe, Ellison, and Steinfield (2007) conducted a study on college students' use of SNS and found that students primarily used Facebook for social purposes (e.g., to stay connected to friends, specifically from high school, and to build connections with people they had already met offline who they wanted to get to know better). In a study by Subrahmanyam, Reich, Waechter, and Espinoza (2008) participants (18 to 29 years old) reported using SNS to connect and reconnect with peers (e.g., friends) and family. Interestingly, when participants' typical

activities on SNS and their reasons for using the sites were analyzed, the findings suggested that emerging adults use online networks particularly to strengthen offline connections. Additionally, the majority of participants reported that they would only add friends or followers to their SNS if they had met them before in person. These data help support the idea that college students may be receiving messages from close friends and affiliated peers through SNS that could reinforce either positive/healthy or permissive risky sex messages.

Sexual Social Media and Sex Behavior Influence

Overall, there has been a paucity of literature exploring the relationship between SNS usage and risky sexual behaviors (Holloway et al., 2014). Studies have examined the content of social media posts to understand what types of information users reveal. College students display a variety of personal information on their SNS profiles, usually including the profile owner's sexual preference, whether the profile owner is currently in a relationship, and displays of sexual messages (Moreno, Parks, Zimmerman, Brito, & Christakis, 2009). By examining the content SNS users make available, researchers have found that some young people have profiles that would be considered sexually permissive (Holloway, et al., 2014). For example, Moreno and colleagues (2009) performed a content analysis of 500 publicly available profiles of adolescents 18 years of age. They found 24% of the profiles contained “personal sexual preferences, self-disclosures of sexual experiences, and pictures of the profile owner in undergarments” (Moreno et al., 2009, pp. 29-30). They also found that females posted more messages including sexual content than males.

Most available studies on social media and actual risk behavior have used selective samples focused on at risk adolescents (13 to 17 year olds) and men who have sex with men (MSM). For example, Young and Rice (2011) conducted a study of homeless youth (ages 13-

24) recruited from social service agencies who primarily used social media through public library computers. Their study suggests that SNS use is an important predictor for STI risk. SNS use was also associated with meeting sexual partners online and talking to friends through SNS about using drugs, which is associated with increased sexual risk. Whiteley et al. (2011) examined technology use among a community sample of 1,500 African American adolescents ages 13 to 17 and found that 60% used SNS most days and that internet use (including SNS use) was associated with increased sexual sensation seeking (e.g., having multiple partners).

SNS also appear to contribute to peer norms regarding sexual behaviors. For instance, Black, Schmiede, and Bull (2013) assessed the relationship between perception and the reality of high risk sexual behavior among peers using SNS. Black and colleagues found that 16 to 25 years olds overestimated high risk sexual behavior and underestimated protective behaviors of their peers. Another study, by Young and Jordan (2013) found that 18 to 25 year old college aged individuals ($n = 154$) assigned to view sexually permissive Facebook photos were more likely to report having had unprotected sex and sex with strangers than those who did not view sexually permissive Facebook photos. Participants were also more likely to report a willingness to engage in unprotected sex and sex with strangers. Their study helps support that content made available on SNS can influence sexual behaviors or intentions.

Emerging adults are likely, to some degree, to use SNS to learn about their peers' attitudes and behaviors (Young & Jordan, 2013). Sexually permissive messages viewed from social media peers, and photos posted by social media peers via SNS may have a negative effect on risky sexual behavior (Cookingham & Ryan, 2015; Holloway et al., 2014). Viewing perceived permissive peer sex messages via SNS may be just as influential as vocalized peer permissive sex messages and maybe even more common given the growing popularity of social

networking (Holloway et al., 2014). In reference to SNS, Holloway et al. (2014) states “they have the capacity to become risky environments that can compromise interpersonal skills, promote risky norms around sexual behaviors and foster disease spread” (p.10). It is unknown if parental warmth and communication serve to protect against some of the effects of risky sexual behavior when emerging adults, particularly African American college students are exposed to permissive sex messages via SNS.

The Present Study

Little research has been conducted exclusively on risky sexual behavior among African American college students. Most of the existing literature is based on White adolescents and White college students (Aicken, Nardone, Mercer, 2010; Bersamin, et al., 2012; Desiderato & Crawford, 1995; Leigh & Schafer, 1993). With the growing susceptibility to HIV for college aged African Americans (CDC, 2013c; CDC, 2013d), it is important to better understand protective factors against risky sexual behaviors that are specific to this group. The present study seeks to clarify the relationships among parental warmth, parental communication about sex, permissive peer sexual messages, permissive social media sexual messages and sexual risk behaviors in a sample of African American college students. The sample was selected from two universities; one historically Black and one predominately White in order to gain an understanding of differences that exist among university populations.

This study is unique because it investigated whether or not parental influences known to have effects on African American adolescents were sustained for African American college students who are in the emerging adulthood developmental period. The current study focused on how two parental factors (parental warmth and parental communication about sex) are related to the associations between permissive sex influences (peer and social media sex messages) and

risky sexual behavior. Both parental warmth (Akers, Holland, & Bost, 2011; Hahm et al., 2008; Miller et al. 1999; Regnerus & Luchies, 2006) and parental communication about sex during adolescence (Deptula, Henry, & Schoeny, 2010; DiIorio, Kelley, Hockenberry-Eaton, 1999; Hutchinson et al., 2003; Usher-Seriki, Bynum, Callands, 2008) have been linked to lower rates of risky sexual behavior and fewer STIs for adolescents and emerging adults, but these factors may have a greater impact on African American college students who report stronger family bonds in comparison to their same-aged White emerging adult peers (Gillmore, et al., 2011).

Additionally, peer permissive messages about sex have been found to predict greater risky sexual behavior for adolescents (Kinsman, et al., 1998; Kirby, 2002; Magnani, et al., 2001; Romer et al., 1994; Stanton et al., 2002; Upadhyay & Hindin, 2006) and emerging adults (Chernoff and Davison 2005; Gibbons et al. 1995; Martens et al. 2006; Scholly et al. 2005; Seal and Agostinelli 1996; Wallace et al., 2008). However, a few studies on emerging adults have concluded that parental warmth and communication about sex serve as protective influences or that these factors will serve as a buffer against the influence of permissive peer messages (Fletcher et al., 2015; Hoskins & Simons, 2015; Metzler et al. 1994; Roberts et al., 2012). This study will add to the research on sexual risk by evaluating the relationships of the abovementioned variables for African American college students, while considering an additional variable of interest, permissive social media sex messages, which are not yet well understood in the literature.

There has been growing popularity of SNS use (Brenner & Smith, 2013), with a gap in the literature investigating how this use affects various behaviors of college students, particularly for African Americans. A greater understanding of factors that influence African American college students is needed considering that online social networking (Duggan and Smith, 2013),

and cell phone internet use (Whitely et al., 2011) is increasing greatly among this group. Due to minimal literature focused on the influence of social media messages, more research is needed on the impact of such messages on sexual behaviors. It is possible that having a strong parent-adolescent bond grounded in parental warmth and/or a history of more frequent parent-adolescent communication about sex may aid African American college students in resisting permissive sex messages from peers and/or their online social networkers.

Theoretical Framework

Miller, Forehand, and Kotchick (1999) studied African American and Hispanic families to understand what variables, such as mother-adolescent general communication, mother-adolescent sexual communication, and maternal attitudes about adolescent sexual behavior, were related to sexual behavior. Their findings suggest that parents play a vital role in shaping their children's attitudes and behaviors and socializing them to become sexually responsible adults. The present study builds upon Miller et al. and similar studies (e.g., DiClemente et al., 2001a; Dilorio, McCarty, Denzmore, & Landis, 2007; Eisenberg, Sieving, Bearinger, Swain, & Resnick, 2006; Fletcher et al., 2015; Guilamo-Ramos, Jaccard, Dittus, & Collins, 2008; Hutchinson et al., 2003; Li et al., 2002) that are guided by the Parent-Based Expansion of the Theory of Planned Behavior (PETPB). PETBP proposes a conceptual framework for the study of family influences on adolescent sexual risk (Hutchinson & Wood, 2007). PETPB was developed from the more widely used Theory of Planned Behavior (TPB; Ajzen, 1985).

The TPB focuses on individuals' intentions. For example, "using a condom during sexual intercourse (a behavior) is a direct function of a person's intention to use a condom during sexual intercourse" (Hutchinson & Wood, 2007, p.142) and has been effectively used in studies of HIV risk related behaviors and condom use (e.g., Albarracin, Johnson, Fishbein, &

Muellerleile, 2001; Fishbein, 2000; Hutchinson, Jemmott, Jemmott, Braverman, & Fong, 2003; Jemmott & Jemmott, 1992; Jemmott, Jemmott, & Fong, 1992; Villarruel, Bishop, Simpson, Jemmott, & Fawcett, 2001). The TPB hypothesizes that intentions are determined by one's beliefs about consequences (attitudes), social norms (perceived social pressure to perform a specific behavior), and control beliefs (amount of difficulty or ease performing a certain behavior) (Ajzen, 1985; Jemmott et al., 2001).

PETPB adds to the TPB model by highlighting the importance of parental influence and is based on Bronfenbrenner's (1989) ecological view of human development. The ecological view that Bronfenbrenner (1989) posits is that people are influenced by others and by nested systems including the microsystem, exosystem, and macrosystem. In PETPB, individuals are nested within multilevel systems, including family, community, and the larger society (Hutchinson & Wood, 2007). PETPB acknowledges that adolescents are significantly influenced by the family system, particularly by parenting factors such as relationship quality, parent-child sexual communication, and parental supervision and monitoring. Hutchinson and Wood (2007) explain that parents are the "most proximal and important influences of adolescent sexual risk behaviors" and "more distally, norms and expectations from communities, schools, and a larger society, and even the historical context, may also exert influence through their effects on the beliefs of parents or the adolescents themselves. These macrolevel influences are deemed external in the PETPB" (p. 143). Based on what Hutchinson and Wood (2007) have proposed, PETPB helps explain to some degree why peer and additional external or more distal influences may not be as salient to sexual behavior as certain parental factors. Kenny and Stryker (1996) found evidence that college students from minority backgrounds depend more greatly on family support (in comparison to peer support) in making adjustments as emerging adults transitioning

to college. When using the PETPB, influences such as permissive peer sexual messages and social media sexual messages would be considered distal in comparison to non-permissive parental messages. It is expected that these influences would have an effect on sexual risk behavior, but not as great as an effect as parental influence, which is the most proximal and important influence on sexual risk behaviors (Hutchinson & Wood, 2007).

The PETPB has been used to guide research explaining sexual behavior (Harris et al., 2013; Hutchinson, 2007; Hutchinson & Wood, 2007; Rodriguez, Topp, & Fehring, 2014; Townsend, 2008; Waldron, Hutchinson, Hewitt, & Hamilton, 2012). Parent-adolescent sexual communication has been one factor studied in the literature using the PETPB model. The model was used to guide research conducted for an African American sample of 488 college students attending a historically Black university (Hutchinson & Montgomery, 2007). The researchers used the PETPB model to explain mothers' intentions regarding their communication about sex with their adolescent daughters. Findings suggest that parental behaviors are significant influences on adolescent sexual behavior. Further, they examined how reported sexual risk communication between participants and parents is associated with sexual attitudes, beliefs, and behaviors and found that sexual risk communication was associated with more conservative sexual attitudes and beliefs, greater ease of sexual communication with partners, and fewer sexual risk behaviors and pregnancies among female students.

Other parenting processes including parental closeness or warmth have also been studied. For instance, Harris, Sutherland, and Hutchinson (2013) used the PETPB to conceptually guide their study of 134 African American men (ages 18 to 22) recruited from the community. They found that parent-child closeness was positively correlated with amount of parent-child sexual communication between 10 and 18; in turn, parent-child closeness was associated with less risky

sexual behavior (e.g., fewer sexual partners, less unprotected sex). Harris and colleagues (2013) state “parent-child closeness and parent child sex communication act as external influences in adolescents’ sexual risk-related behaviors and normative and/or control beliefs, which in turn influence their sexual risk intentions and behaviors” (Harris, Sutherland, & Hutchinson, 2013, p.143). Additionally, a longitudinal study by Miller and colleagues (1997) found that maternal withdrawal of warmth was a significant predictor of earlier sexual onset for female participants.

Fletcher et al. (2015) conducted a study on African American undergraduate students and found even after participants reported their peers had communicated permissive sexual messages, when their parents had emphasized less permissive sexual messages and more messages focused on abstinence and sex within a monogamous relationship students reported less sexual experimentation. This study fits well under the PETPB model and provides an example of peer influences being more distal when compared to parental factors. It is hypothesized that online social media influences will operate similarly to peer influence in the PETPB framework. A study by Subrahmanyam, Reich, Waechter, and Espinoza (2008) supports this impression and found that emerging adults use social media to strengthen peer connections.

To conclude, PETPB has been used in research to identify key factors associated with sexual risk behaviors among adolescents and young adults including general parent-child communication, parent-adolescent communication about sex, parental attitudes about sexual behavior, maternal role modeling, parental monitoring or supervision, and parent-child relationship dynamics (DiClemente et al., 2001b; Dilorio et al., 2007; Eisenberg et al., 2006; GuilamoRamos et al., 2008; Hutchinson et al., 2003; Li et al., 2002). However, given the impact parents have on their adolescents and young adult’s sexual risk taking, it is important to see if this relationship still exerts this influence and, given the increased use of social media

within this population, if it serves as a buffer to permissive social media messages. Therefore, the purpose of this study is to explore the value of using the PETPB to understand how permissive peer sexual messages and social media sexual messages influence sexual risk behaviors while considering parental factors for African American college students.

Hypotheses

H1: More parental communication about sex during adolescence will be associated with less risky sexual behavior for African American college students.

H1A: More permissive peer sex messages will be associated with more risky sexual behavior for African American college students.

H1B: Parental communication about sex during adolescence will moderate the association between permissive peer sex messages and risky sexual behavior for African American college students. As parental communication about sex increases the association between permissive peer sex messages and risky sexual behavior will decrease.

H1C: More social media sex messages will be associated with more risky sexual behavior for African American college students.

H1D: Parental communication about sex during adolescence will moderate the association between social media sex messages and risky sexual behavior for African American college students. As parental communication about sex increases the association between social media sex messages and risky sexual behavior will decrease.

H2: More parental warmth during adolescence will be associated with less risky sexual behavior for African American college students.

H2A: Parental warmth will moderate the association between permissive peer sex messages and risky sexual behavior for African American college students. As parental warmth increases the association between permissive peer sex messages and risky sexual behavior will decrease.

H2B: Parental warmth will moderate the association between social media sex messages and risky sexual behavior for African American college students. As parental warmth increases the association between social media sex messages and risky sexual behavior will decrease.

Exploratory Research Questions:

Q1. Are parental communications about sex or parental warmth differentially associated with risky sexual behavior for African American college students?

Q2. Are permissive peer sex messages or social media sex messages differentially associated with risky sexual behavior for African American college students?

CHAPTER II

METHOD

Participants

Participants were students recruited from a predominately White institution (PWI) and an HBCU in the southeast of the U.S. To be eligible for the study participants must have been between the ages of 18 and 25 years old (i.e., within the emerging adulthood developmental period), unmarried, an undergraduate student, and self-identified as African American. No additional exclusionary criteria were used. The total sample size post-survey collection was 592 participants. The sample size was larger at the HBCU ($n = 435$) compared to the PWI ($n = 157$). Individuals were removed ($n = 156$) if they were not between 18-25 years old. Twelve individuals were removed from the study because they did not self-identify as African American. Additionally, seven individuals were not included because they were either married or separated. Another 17 individuals were dropped from the study because they were not undergraduate students. Thus, 192 individuals were deleted due to not meeting criteria for the study. Following the removal of these participants, the sample size included 400 individuals. Next, an additional 54 individuals were dropped from analyses because they did not respond to the question that asked if they had ever had sex, which caused them to skip items on the outcome variable measure. Nine more individuals were dropped from analyses because they answered either zero of the outcome measure questions, or answered only one question out of 24 questions on the outcome measure. Additionally, 36 individuals reported that they had never had sex and thus were not prompted to answer the questions on the outcome measures. As a result, the final sample size was 301.

To detect a medium effect ($f^2 = .15$; Cohen, 1977), which was evidenced in a prior study with similar variables (Jerman & Constantine, 2010), an a priori power analysis using the software package G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) was conducted. The power analysis included an α of .05, eleven projected covariates, and indicated that a sample size of 196 participants at minimum would be required to detect a medium effect for the regression analyses.

The final sample included 123 (40.9%) students from the PWI and 178 (59.1%) students from the HBCU. The mean age of the participants was 20.45 years old ($SD = 1.88$). Consistent with the gender makeup of African American students at the universities where data collection took place, the sample included 233 females (77.4%), 67 males (22.3%), and 1 (.3%) transgender individuals. Only participants who identified that they had had vaginal, oral, or anal sex were included in the sample. Detailed demographic characteristics of the sample are reported in Table 1.

Table 1

Demographic Characteristics of Sample

Characteristic	HBCU	PWI
<i>School</i>		
PWI	--	123 (40.9%)
HBCU	178 (59.1%)	--
<i>Gender</i>		
Male	40 (22.4%)	27 (22%)
Female	137 (77.0%)	96 (78.0%)
Transgender	1 (0.6%)	0
<i>Relationship Status</i>		
In Relationship- Living with Partner	12 (6.7%)	9 (7.3%)
In Relationship- Not Living with Partner	49 (27.5%)	33 (26.8%)
Single	117 (65.7%)	81 (65.9%)

Table 1 continued

Characteristic	HBCU	PWI
<i>Classification</i>		
Freshman	41 (23.0%)	47 (38.2%)
Sophomore	30 (16.9%)	21 (17.1%)
Junior	46 (25.8%)	30 (24.4%)
Senior	61 (34.3%)	25 (20.3%)
<i>Sexual Orientation</i>		
Heterosexual or Straight	163 (91.6%)	111 (90.2%)
Lesbian or Gay	4 (2.2%)	6 (4.9%)
Bisexual	9 (5.1%)	6 (4.9%)
Unsure/Questioning	1 (0.6%)	0
Other	1 (0.6%)	0
<i>Family Income</i>		
\$10,000-20,000	46 (25.8%)	29 (23.6%)
\$20,000-60,000	66 (37.1%)	41 (33.3%)
\$60,000-90,000	36 (20.2%)	23 (18.7%)
\$90,000-110,000	20 (11.2%)	16 (13.0%)
\$110,000 and above	9 (5.1%)	13 (10.6%)
<i>Mother's Education Level</i>		
Some High School	9 (5.1%)	1 (0.8%)
High School	29 (16.3%)	17 (13.8%)
Some College	56 (31.5%)	41 (33.3%)
College	54 (30.3%)	37 (30.1%)
Some Graduate School	9 (5.1%)	4 (3.3%)
Graduate School	20 (11.2%)	22 (17.9%)
Not Sure	0	0
<i>Father's Education Level</i>		
Some High School	13 (7.3%)	8 (6.5%)
High School	55 (30.9%)	41 (33.3%)
Some College	50 (28.1%)	25 (20.3%)
College	25 (14.0%)	24 (19.5%)
Some Graduate School	4 (2.2%)	2 (1.6%)
Graduate School	15 (8.4%)	17 (13.8%)
Not Sure	16 (9.0%)	6 (4.9%)

Table 1 continued

Characteristic	HBCU	PWI
<i>Sex Educator in the Home</i>		
Sibling	10 (5.6%)	7 (5.7%)
Mother	94 (52.8%)	75 (61.0%)
Father	17 (9.6%)	10 (8.1%)
Grandparent	8 (4.5%)	4 (3.3%)
Other	9 (5.1%)	5 (4.1%)
None	40 (22.5%)	21 (17.1%)
<i>Number of Sexual Partners in Lifetime</i>		
1 person	29 (16.3%)	23 (18.7%)
2 people	24 (13.5%)	23 (18.7%)
3 to 5 people	58 (32.6%)	41 (33.3%)
6 to 9 people	32 (18.0%)	18 (14.6%)
10 or more people	34 (19.1%)	17 (13.8%)
<i>Have you ever had sex?</i>		
Yes	178 (88.1%)	123 (91.1%)
<i>Vaginal intercourse without condom during last 3 months</i>		
0 times	70 (34.7%)	41 (30.4%)
1 to 2 times	42 (20.8%)	21 (15.6%)
3 to 6 times	24 (11.9%)	19 (14.1%)
6 to 9 times	9 (4.5%)	13 (9.6%)
10 or more times	36 (17.8%)	32 (23.7%)
<i>Have you ever been tested for an STI?</i>		
Yes	136 (76.4%)	85 (69.1%)
No	41 (23.0%)	35 (28.5%)
<i>Have you ever had a STI?</i>		
Yes	39 (21.9%)	16 (13.0%)
No	138 (77.5%)	106 (86.2%)
<i>Are you on social media?</i>		
Yes	155 (87.1%)	110 (89.4%)
No	23 (12.9%)	13 (10.6%)

Procedure

To ensure that all ethical standards were met prior to data collection, the study was approved by the Human Subjects Committee at the PWI and the Institutional Review Board at the HBCU. At the PWI, participants were recruited using the SONA Research Participation Credit System (SONA) which allows students to manage their research participation using a single website. Through this system, students received class credit for their participation in the study. After signing into their SONA account participants gain access to a list of available studies, and are able to sign up for studies of interest. Each study listed includes the name of the study, the number of credits being offered, exclusionary criteria, and a brief description of the study. Those who were interested in the present study clicked on a timeslot available button to sign up for the study which directed them to a page that provided additional details. The additional details included that the online survey would inquire about parent-adolescent relationships, communication about sex during adolescence, peer messages, social media use, and current sexual behavior. If they chose to sign up for the study they then clicked on a link which provided them with a deadline to complete the survey. They could return to SONA any time before the deadline to complete the study. Once they began the study individuals were directed to another study description page that provided a brief explanation of the current study, exclusionary criteria, objectives, risks, and benefits of the study. Prior to continuing, each participant was asked to read and accept all of the elements of this informational page (see Appendix A). Participants were instructed to exit the survey if they did not meet or accept these criteria.

At the HBCU, a list of 3,794 current African American students provided by the Office of Institutional Research was used to recruit participants. Then a series of email announcements

were sent to students informing them of the study and its purpose. The announcement invited students to complete an online survey about their parent-adolescent relationship, communication about sex during adolescence, peer messages, social media use, and current sexual behavior. Individuals who indicated their interest in the study were directed to an online page containing the study description, contact information for the researchers, as well as exclusion criteria. Following this, participants were directed to a second page with more detailed information regarding the study including risks and benefits. Participants were made aware that the study was voluntary and if they did not agree to accept the information presented on the information pages (see Appendix B), or chose to discontinue the study after beginning, they could exit at any time. Participants consented to the study by clicking *I Agree* to proceed. Once participants completed the survey at the HBCU they had the option to be entered into a raffle for two \$50 gift cards. Additionally, some professors at the HBCU aided with recruitment for the study by encouraging students to participate for extra credit. The percent of extra credit given was determined by each professor. Since extra credit was offered as an incentive, all individuals who did not meet eligibility criteria and did not opt out after reading the exclusionary criteria were still able to complete the entire survey to allow for fairness amongst participants in terms of the dissemination of extra credit.

Participants' survey responses were kept anonymous; all of the survey data was kept separate from any identifying information. Only numerical data that was made available via an SPSS data file was kept at the completion of data collection. Following data collection, two students were randomly selected to receive a \$50 gift card. The students were notified via email and claimed the gift cards within two weeks of being notified.

Measures

Demographics. Participants were asked to complete a demographics questionnaire created by the researcher for the purpose of this study (see Appendix C). The questions included items assessing the following demographic information: age; gender; education classification; sexual orientation; race/ethnicity; family income; parental education; sex educator in the home (e.g., sibling, mother, father, etc.); family structure (e.g., single, two-parent home); relationship status.

Sexual history. Participants were asked about their sexual history. A definition of sexual behaviors was provided. If participants indicated a history of sexual activity they were asked to complete a questionnaire regarding their sexual background (see Appendix C). Sexual history questions included age when first engaged in sexual behavior, number of lifetime sexual partners, number of times engaged in vaginal sex without a condom or barrier in the past three months, history of STI testing including HIV, etc.

Social media intensity. If participants indicated being active on social media they were asked to complete a questionnaire regarding their social media use in order to collect quantitative information about their social media engagement. To measure social media intensity a modified version of the Facebook Intensity Scale (FBI; Ellison, Steinfield, & Lampe, 2007) was used (see Appendix D). The FBI scale is used to measure Facebook usage, emotional connectedness to the site, and its integration into individuals' daily activities (Ellison, Steinfield, & Lampe, 2007). In this study, instead of solely focusing on Facebook, participants who reported using any type of social media site were asked to respond to a series of statements by indicating their feelings and behaviors related to the social media site they use most often. They were asked to mentally insert their most used social media site into blank sentence spaces. For example, "_____ is

part of my everyday activity.” Most responses were rated along a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). One question (i.e. “Approximately how many total people do you follow/friend on _____?”) was ranked on a 9-point Likert scale from 1 (*10 or fewer*) to 9 (*more than 400*). Another question (i.e. “In the past week, on average, approximately how much time per day have you spent actively using _____?”) had a 6-point Likert scale ranging from 1 (*less than 10 minutes*) to 6 (*more than 3 hours*). Scores across the eight items were summed and averaged with higher scores indicative of greater social media intensity. The FBI has demonstrated good internal consistency reliability ($\alpha = .86$ and $.83$; Clayton, Osborne, Miller, & Oberle, 2013 and Ellison, Steinfield, & Lampe, 2007 respectively) and a confirmatory factor indicated that latent variables on the questionnaire loaded on a single factor (Yoder & Stutzman, 2011). There has been no prior reliability or validity conducted on the modified version of the FBI used in this study. In the current study, the modified version of the FBI scale demonstrated questionable internal consistency ($\alpha = .66$).

Covariate Measure

Religious commitment. The Religious Commitment Inventory-10 (RCI-10) contains ten items and measures the level of one's religious commitment including religious beliefs, values, and practices and whether a person utilizes their beliefs, values, and practices in daily life (RCI-10; Worthington et al., 2003; see Appendix E). The RCI-10 measure was used as a covariate in this study due to strong religious commitment being associated with decreased risk behaviors for African American college students in a prior study (Abar, Carter, & Winsler, 2009). The RCI-10 has a 5-point Likert rating scale from 1 (*Not at all true of me*) to 5 (*Totally true of me*) and has two subscales, Intrapersonal Religious Commitment (6 items) and Interpersonal Commitment (4 items). Examples include “I enjoy spending time with others of my religious affiliation” and “I

enjoy working in the activities of my religious organization” from the Interpersonal subscale and “It is important to me to spend periods of time in private religious thought and reflection” from the Intrapersonal subscale. Scores were summed to form a total score, with higher scores indicating more religious commitment.

The RCI-10 has exhibited excellent internal consistency reliability for the overall measure ($\alpha = .93$) and for the Intrapersonal Religious Commitment scale ($\alpha = .92$), and good internal consistency for the Interpersonal Religious Commitment ($\alpha = .87$) scale (Worthington, et al., 2003). Three week test–retest reliability coefficients for the RCI–10, Intrapersonal Religious Commitment scale, and Interpersonal Religious Commitment scale were .87, .86, and .83, respectively (Worthington et al., 2003). To test the construct validity of the RCI-10 church attendance was correlated with the Intrapersonal Religious Commitment subscale ($r = .70, p < .001$), and the Interpersonal Religious Commitment subscale ($r = .80, p < .001$). Additionally, Worthington et al. (2003) found the RCI-10 to be significantly correlated with a single-item measure of participation in religion. In the current study, the overall RCI-10 scale demonstrated excellent internal consistency ($\alpha = .93$).

Predictor Measures

Parental communication about sex. Parental communication about sex during adolescence (between 10-18 years old) was measured by the eight item Parent-Teen Sexual Risk Communication Scale (PTSRC III; Hutchinson, 2007; see Appendix F). This measure assessed the amount of communication that occurred around the following areas: (1) birth control, (2) STI, (3) HIV (4) preventing STIs and HIV, (5) condom use, (6) postponing sex, (7) pressure to have sex, and (8) how to resist pressure to have sex. The PTSRC-III includes two separate scales for participants to report communication with their mother and father. Only participants who

indicated having a mother and/or father involved in their life while growing up responded to questions on the PTSRC-III. Participants received instructions that clarify mother (or father) may refer to a biological parent, stepparent, guardian, or other female (or male) parent-like adult. Scale items include “Between the ages of 10-18, how much information did your mother/father give you about condom use?”, “Between the ages of 10-18, how much did your mother/father give you about postponing sex?” Participants rated how well each statement described their experience based on a 5-point Likert scale ranging from 1 (*nothing*) to 5 (*everything*). Scores were summed for each scale and ranged from 8 to 40, with higher scores representing more extensive sexual risk communication between the parent(s)/parental figure and the participant.

The reliability of the PTSRC-III was excellent to good with a sample of college students’ reports of sexual communication with their mothers ($\alpha = .93$) and fathers ($\alpha = .88$) (Hutchinson, 2002). Test-retest reliability was good to acceptable when conducted on college students’ communication with mothers and fathers ($r = .88$ for PTSRC with mother; $r = .79$ for father; Hutchinson, 2007). Based on Hutchinson (2007), evidence of content validity was found by eight experts (e.g., nurse researchers, sex educators, etc.) who rated the PTSRC-III on a scale of 1 to 10 in terms of representativeness and comprehensiveness of items related to sexual risk (representativeness, $M = 9.0$; comprehensiveness, $M = 8.6$). Construct validity was found by examining associations between daughters’ PTSRC-III scores and global sexual parental communication (mother, $r = .73, p < .001$; father, $r = .80, p < .001$), closeness with mother ($r = .38, p < .001$), and perceived parental comfort with sexual communication (mother, $r = .61, p < .001$; father, $r = .61, p < .001$) (Hutchinson, 2007). Literature has supported the association between the constructs mentioned and parent-teen sexual risk communication (Hutchinson, 1994; Hutchinson, 2002; Hutchinson, 2007; Hutchinson & Cooney, 1998; Whitaker, Miller, May

& Levin, 1999). Additionally, PTRSC-III scores were associated positively and significantly with adolescents' reports of condom use self-efficacy ($r = .23, p < .05$) and sexual communication with partners ($r = .25, p < .005$) (Hutchinson & Cooney, 1998). In the current study, the PTRSC-III scale demonstrated excellent internal consistency, with $\alpha = .94$ for both the mother and father scales.

Parental warmth. Parental warmth was measured with the short form 23-item English language version of the My Memories for Upbringing (Arrindell et al., 1999; see Appendix G) measure. The measure was originally developed in Sweden as the Egna Minnen Beträffande Uppfostra (EMBU), or "My Memories for Upbringing," and has been translated into several languages. The original 81-item EMBU is a widely used measure of retrospective accounts of parental rearing behavior developed by Perris, Jacobsson, Lindström, von Knorring, and Perris (1980). The s-EMBU (short version) measures adults' perceived parental rearing behavior with three subscales, including the Rejection, Emotional Warmth, and Overprotection subscales. Only participants who indicated having a mother and/or father involved in raising them responded to questions on this measure. Participants received instructions to clarify that mother (or father) refers only to a biological parent or adoptive parent, and separate scales for each parent involved with raising them were given. Participants' perceived behavior of their parent(s) was gathered by a 4-point Likert scale ranging from 1 (*no/never*) to 4 (*yes, most of the time*). For the purpose of this study participants' responses on the Emotional Warmth subscale were used, and were totaled by summing 6 items, with higher scores being indicative of greater parental warmth. Example items include "I felt that my parent was proud when I succeeded in something I had never undertaken" and "I felt that warmth and tenderness existed between me and my parent".

The Emotional warmth subscale of the s-EMBU has evidenced excellent internal reliability ($\alpha = .90$) with both undergraduate students from the UK and Canada (Irons, Gilbert, Baldwin, Baccus, & Palmer, 2006) and good internal reliability with undergraduates from the U.S. ($\alpha = .88$; Baker & Hoerger, 2012). Regarding construct validity, the Emotional Warmth subscale was negatively correlated with neuroticism ($r = -.17, p < .001$), and positively correlated with high self-esteem ($r = .26, p < .001$) when female participants rated their perception of their mother's warmth (Arrindell et al., 2005). Additionally, s-EMBU scores have been closely associated with parents' self-report of their own child-rearing practices (Aluja, del Barrio, & García, 2006). Other studies using the s-EMBU, conducted in several countries including the U.S., have found parental child-rearing strategies to be associated with self-regulation, subjective well-being, self-esteem, overall interpersonal adjustment, general distress, and depression in adulthood (Abar, Carter, & Winsler, 2009; Avagianou & Zafiropoulou, 2008; Flouri, 2007; Huppert, Abbott, Ploubidis, Richards, & Kuh, 2010; Petrowski et al., 2009; Winefield, Goldney, Tiggemann, & Winefield, 1989). In the current study, the Emotional Warmth subscale of the s-EMBU for mothers and fathers demonstrated good internal consistency, with alpha values of .84 and .87, respectively.

Peer permissive sexual messages. The Sexual Socialization Instrument (SSI) is a 20-item measure used to assess permissive sexual messages of parents and peers. This instrument contains two scales, the Parental Sexual Socialization Scale and the Peer Sexual Socialization Scale (Lottes & Kuriloff, 1994; see Appendix H). For this study, the 12-item Peer Sexual Socialization Scale was used to measure permissive peer messages which includes acceptance of nonmarital sexual interactions or encouraging sexual involvement in a wide variety of relationships (from casual to long term). Participants responded to all questions on a 5-point

Likert scale ranging from 1 (*Strongly Agree*) to 5 (*Strongly Disagree*). Some items were reverse scored. Scores were summed to create a total ranging from 12 to 60, with higher scores meaning more permissive peer influence. Examples of items include “My friends disapprove of being involved with someone who was known to be sexually easy,” “I am uncomfortable around people who spend much of their time talking about their sexual experiences,” and “Most of my friends don’t approve of having multiple sex partners.” Examples of reversed scored items include “Among my friends, men who have the most sexual experience are the most highly regarded,” and “Among my friends alcohol is used to get someone to sleep with you.”

The Peer Sexual Socialization Scale of the SSI evidenced good internal consistency with college seniors ($n = 303$; $\alpha = .85$; Lottes & Kuriloff, 1994). Lottes and Kuriloff (1994) also evaluated construct validity of the Peer Socialization scale, which was supported by statistically significant results for predicted group differences. Specifically, men ($M = 16.18$ years) compared to women ($M = 13.86$ years) and first year male students who went on to join a fraternity ($M = 17.74$ years) compared to first year male students who did not join a fraternity ($M = 15.18$ years) reported significantly higher scores on the Peer Socialization scale. They also tested the Peer Socialization scale for convergent and discriminant validity, finding the scale to be positively correlated with number of sex partners ($r = .30, p < .001$) and negatively correlated with age of first sexual onset ($r = -.19, p < .05$). In the current study, the Peer Socialization scale demonstrated acceptable internal consistency ($\alpha = .72$).

Social media sexual messages. A 33-item measure of values related to sex and relationships was used to assess messages received through social media (Epstein & Ward, 2008; see Appendix I). The measure was modified and adopted from a study by Epstein and Ward (2008) for students in their formative years (ages 5 to 18) and asked participants about the

influence significant others (parents, peers, media) had on how they thought about topics related to sex. For the current study, modifications of instruction were made. The current study did not assess for retrospective accounts, and instead allowed participants to include any sexual values and messages received. Additionally, Epstein and Ward (2008) assessed for parent, peer, and media (TV/movies) sexual values and messages, whereas the current study only assessed for social media sexual value messages.

If participants indicated being active on social media they were asked to respond to statements on a 4-point Likert scale ranging from 0 (*None*) to 3 (*A lot*) to indicate the extent to which social media communicates each value/message. Epstein and Ward (2008) developed five subscales including (1) Sexual Stereotypes About Men, (2) Importance of Love to Sexual Relationships, (3) Sexual Freedom, (4) Sex Is for Marriage, and (5) Sexual Stereotypes About Women. The Sexual Freedom subscale, which has 8 items and promotes premarital and non-relational sex as natural, fun, and appropriate was used for the purpose of this study. Participants' responses were totaled by summing 8 items, with higher scores indicative of greater received messages of sexual freedom from social media. Examples from the subscale include "College is a time for sexual exploration," "Having sex should not necessarily imply your commitment to that person," and "Sex outside of marriage is fine as long as protection is used to prevent AIDS, STDs, & pregnancy."

The Sexual Freedom subscale has demonstrated good internal consistency reliability ($\alpha = .82$; Epstein & Ward, 2008). A principal component analysis based on parental socialization messages was used to validate each subscale. In the current study, the Sexual Freedom subscale demonstrated good internal consistency ($\alpha = .83$).

Outcome Measure

Safe sex behaviors. Safe sex behaviors, measured by the frequency of using recommended practices that reduce one's risk of exposure to and transmission of STIs was measured by the 24-item Safe Sex Behavior Questionnaire (SSBQ; DiIorio, Parsons, Lehr, Adame, & Carlone, 1992; see Appendix J). If participants indicated ever engaging in sexual behavior they were asked to respond to questions on a 4-point Likert scale ranging from 1 (*Never*) to 4 (*Always*). Negatively worded items were reverse coded and scores were summed. Total scores ranged from 24 to 96, with higher scores indicating more use of safer-sex practices. Examples of items include "I insist on condom use when I have sexual intercourse," "I ask my potential sex partners about their sexual histories," "I ask my potential sexual partners about a history of IV drug use." Examples of reverse coded items include "I engage in sexual intercourse on a first date" and "I drink alcoholic beverages prior to or during sexual intercourse."

The SSBQ evidenced good internal consistency with sexually active college students ($n = 584$; $\alpha = .82$; DiIorio, Dudley, Lehr, & Soet, 2000) and sexually active college freshmen ($n = 531$; $\alpha = .84$; DiIorio, Parsons, Lehr, Adame, & Carlone, 1993). Test-retest reliability was assessed using responses of sexually active college students ($n = 100$) who were assessed two weeks apart ($r = .82$; DiIorio, Dudley, Lehr, & Soet, 2000). Several experts rated each item of the SSBQ on the extent of relevancy to safer sex practices and content validity was reported at 98% (DiIorio et al., 1993). The SSBQ correlated in predicted directions with risk taking and assertiveness (DiIorio et al., 1993). In the current study, the SSBQ demonstrated good internal consistency ($\alpha = .82$).

CHAPTER III

RESULTS

Data Analysis Strategy

Prior to conducting and evaluating main analyses data were cleaned and analyzed for missing data patterns. Several variables had missing data points due to participants skipping items because they were not applicable to the individual. Specifically, with the PTSRCS-M and EWARM-M scales (refer to Table 2 for full names of measures) 23 participants were not given these questions because they did not report having a mother or mother-like-figure while growing up. Similarly, for the PTSRCS-F and the EWARM-F scales, 161 participants were not given these questions because they did not report having a father or father-like-figure. For the SOCIALM scale, 47 participants indicated not using social media, and therefore did not receive these questions. Lastly, if participants indicated never having sex, they were not given the questions on the SSBQ (outcome measure of safe sex behaviors). All questions that were not given were labeled missing, but not missing at random, as participants were unable to answer questions that were not applicable. For participants who could not answer questions on the SSBQ due to indicating they had never had sex, their data were excluded from analyses. Data were kept for participants who indicated having had sex (completed the SSBQ), but did not have responses on one or more of the predictor measures (i.e., PTSRCS-M, PTSRC-F, EWARM-M, EWARM-F, SOCIALM). Therefore, measures had varied *N* sizes. Descriptive statistics for each of the measures are presented in Table 2.

After the skipped data was handled, a Missing Values Analysis (MVA) was conducted and revealed missingness on the following measures: RCI, PTSRCS-M, PTSRCS-F, EWARM-M, EWARM-F, SSI, SOCIALM and the SSBQ. The total missingness for the current data was

less than 5%, which is a relatively small amount (Dempster, Laird, & Rubin, 1977). Due to the small percentages of missingness on each variable, data were considered to be missing at random (MAR) instead of missing completely at random (MCAR). MAR and MCAR determinations are difficult to make based on percentages of missing data, hence the more conservative approach of the two was used to explain the missingness in the data. Expectation Maximization (EM) was used to address missing data separately for each variable, with the EM algorithm replacing missing values for items. EM imputation was chosen because it preserves the relationship between variables which is vital for analyses such as hierarchical multiple regression. Data were not imputed on data points which were skipped due to being non-applicable, as participants were unable to answer these questions.

Table 2

Descriptive Statistics of Study Measures

Measure	<i>N</i>	<i>M (SD)</i>	Range [Min, Max]	Skewness (<i>SE</i>)	Kurtosis (<i>SE</i>)
RCI	301	24.18 (8.03)	30 [10, 40]	0.11 (0.14)	-0.73 (0.28)
PTSRCS-M	295	25.58 (9.44)	32 [8, 40]	-0.11 (0.14)	-0.98 (0.28)
PTSRCS-F	246	17.11 (9.14)	32 [8, 40]	0.79 (0.16)	-0.41 (0.31)
EWARM-M	284	19.11 (4.13)	18 [6, 24]	-1.01 (0.15)	0.38 (0.29)
EWARM-F	194	18.06 (4.69)	18 [6, 24]	-0.74 (0.18)	-0.30 (0.35)
SSI	301	34.27 (6.95)	44 [12, 56]	-0.10 (0.14)	0.21 (0.28)
SOCIALM	265	13.75 (5.85)	24 [0, 24]	-0.40 (0.15)	-0.40 (0.30)
SSBQ	301	73.57(10.38)	47 [49, 96]	-0.11 (0.14)	-0.59 (0.28)

Note. RCI = Religious Commitment Inventory; PTSRCS-M = Parent-Teen Sexual Risk Communication Scale- Mother; PTSRCS-F = Parent-Teen Sexual Risk Communication Scale- Father; EWARM-M = My Memories for Upbringing- Emotional Warmth Scale- Mother; EWARM-F = My Memories for Upbringing- Emotional Warmth Scale- Father; SSI = Sexual Socialization Instrument - Peer Permissive Sex Scale; SOCIALM = Social Media Messages- Sexual Freedom Subscale; SSBQ = Safe Sex Behavior Questionnaire.

Histograms and descriptive statistics were used to assess normality, skewness, and kurtosis. It was found that all variables were approximately normally distributed in the model.

Univariate outliers were examined through boxplots and multivariate outliers were examined through the calculation of Cook's *D* (Cohen, Cohen, West, & Aiken, 2003). Results did not indicate any significant outliers. Linear regression assumptions were examined to ensure all assumptions were properly met. Linearity was evaluated by a review of a partial scatterplot of all involved variables and indicated a linear relationship between independent variables and the dependent variable. The assumption of independent errors was also met. Variables in the model were found to have relatively small error terms, which are acceptable in social science research, as zero error is statistically impossible. Homoscedasticity (the variance of error across all levels of the IV) was evaluated and presented a random display of points, and the spread of residuals appeared fairly constant over the range of values of the independent variables. Before hierarchical multiple regression analyses could be performed predictor variables including mother's education level, religious commitment, parent-teen communication about risky sex (mother and father), parental warmth during adolescence (mother and father), permissive peer sex messages, and social media sex messages were centered in order to reduce potential multicollinearity. The variance inflation factor (VIF) was less than 10 across the model, suggesting that multicollinearity was not an issue. Lastly, the assumption of correct specification (inclusion) of all theoretically relevant independent variables was considered. Based on the literature review provided in the introduction of this study, several of the predictors in our overall model have theoretical relevance.

Bivariate Analyses

Table 3 displays the descriptive statistics and intercorrelations between all variables in the study. Mother-teen communication about sex was positively correlated with father-teen communication about sex. This indicates that those who had more conversations with their

mothers about risky sex as a teen were more likely to also have more conversations about risky sex with their fathers. Maternal warmth was positively correlated with parental (mother and father) teen communication about sex. This suggests that those who viewed their mothers as emotionally warm while growing up were more likely to have had more conversations with their mothers and fathers about risky sex as a teen. Paternal warmth was positively associated with parental (mother and father) teen communication about sex. This indicates that participants who viewed their fathers as emotionally warm while growing up were more likely to have had more conversations with their mothers and fathers about risky sex as a teen. There was a positive correlation between permissive peer sex messages and gender, male participants were more likely to hear greater permissive messages about sex from peers. There was a negative correlation between permissive peer sex messages and paternal warmth, participants who heard greater permissive messages about sex from peers reported lower emotional warmth from their fathers.

Additionally, there was a negative correlation between low risk sexual behavior and gender, females were more likely than males to report low risk sexual behavior. There was a positive correlation between school and low risk sexual behavior, meaning those who attended an HBCU engaged in less risky sexual behavior compared to those attending a PWI. There was also a positive correlation between religious commitment and low risk sexual behavior, participants who had greater religious commitment were more likely to engage in less risky sexual behavior. Low risk sexual behavior was also positively correlated with maternal warmth and mother-teen communication about sex. This indicates that those who engaged in less risky sexual behavior were more likely to report their mothers as emotionally warm while growing up. Also, those who indicated engaging in less risky sexual behavior were also more likely to report

having more conversations with their mothers about risky sex as a teen. Lastly, low risk sexual behavior was negatively correlated with permissive peer sex messages, participants who engaged in riskier sex were more likely to hear greater permissive messages about sex from peers.

Preliminary Findings

Data were analyzed to find differences among predictor variables in order to confirm which variables needed to be controlled (as covariates). For continuous variables bivariate correlations were examined. RCI (religious commitment) was positively significantly related to SSBQ (see Table 3), meaning participants who were more religious reported lower risky sexual behavior. A one-way between subjects ANOVA was conducted to determine if there was a difference between schools. Participants who attended a PWI reported significantly riskier sex ($M = 71.98$, $SD = 10.31$), $F(1, 299) = 4.98$, $p = .026$, 95% CI [70.14, 73.82] compared to participants who attended an HBCU ($M = 74.67$, $SD = 10.32$), 95% CI [73.15, 76.20].

Gender originally contained three groups (1= *Male*, 2= *Female*, 3= *Transgender*). Due to the small sample size of transgender participants ($n = 1$) no comparisons among the three groups could be made. Therefore, the participant who identified as transgender was recoded as missing and gender was analyzed as 1= *Male*, 0= *Female*. A one-way between subjects ANOVA was run to determine if there was a difference between genders. Male participants reported significantly riskier sex ($M = 70.24$, $SD = 9.20$), $F(1, 299) = 9.12$, $p = .003$, 95% CI [67.99, 72.48] compared to female participants ($M = 74.53$, $SD = 10.52$), 95% CI [73.17, 75.88].

A one-way between subjects ANOVA was run to determine if there was a difference between relationships status. Participants who were in a relationship had significantly riskier sex ($M = 71.63$, $SD = 10.59$), $F(1, 299) = 5.56$, $p = .019$, 95% CI [69.56, 73.671] compared to participants who were single ($M = 74.58$, $SD = 10.15$), 95% CI [73.16, 76.00].

Table 3

Intercorrelations of Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. AGE	--												
2. SCH	.21***	--											
3. GND	.09	-.00	--										
4. RELS	-.08	.01	.11*	--									
5. MEDUC	.05	-.10	.03	-.09	--								
6. RCI	.06	.04	-.09	.08	.09	--							
7. PTSRCS-M	-.12*	-.05	-.11*	-.13*	.09	.09	--						
8. PTSRCS-F	-.07	.03	.31***	-.03	.06	.08	.44***	--					
9. EWARM-M	-.01	-.02	-.04	-.07	.10	.27***	.46***	.16*	--				
10. EWARM-F	-.19**	.03	-.21**	-.10	-.02	.20**	.30***	.26***	.40***	--			
11. SSI	.06	.01	.36***	.04	.03	-.17**	-.04	.09	-.10	-.19**	--		
12. SOCIALM	-.03	-.11	.04	.04	-.01	.07	.04	-.06	-.05	.07	.03	--	
13. SSBQ	-.07	.13*	-.17**	.14*	-.05	.19**	.12*	.14	.26***	.13	-.18**	.02	--

Note. SCH= School, (1 = *HBCU*; 0 = *PWI*); GND = Gender, (1 = *male*; 0 = *female*); RELS = Relationship Status, (1 = *single*, 0 = *In a relationship*); MEDUC= Mother's Education Level (1= *Some High School*, 2= *High School*, 3= *Some College*, 4= *College*, 5= *Some Graduate School*, 6= *Graduate School*); RCI = Religious Commitment Inventory; PTSRCS-M = Parent-Teen Sexual Risk Communication Scale- Mother; PTSRCS-F = Parent-Teen Sexual Risk Communication Scale- Father; EWARM-M = My Memories for Upbringing- Emotional Warmth Scale- Mother; EWARM-F = My Memories for Upbringing- Emotional Warmth Scale- Father; SSI = Sexual Socialization Instrument - Peer Permissive Sex Scale; SOCIALM = Social Media Messages- Sexual Freedom Subscale; SSBQ = Safe Sex Behavior Questionnaire.

* $p < .05$, ** $p < .01$, *** $p < .001$

Potential covariates that were found nonsignificant included age (see Table 3), parental income, $F(4, 294) = 0.27, p = .899$, year in school, $F(3, 297) = 0.77, p = .510$, mother's education level (see Table 3), $F(5, 293) = 1.40, p = .225$, and father's education level, $F(6, 264) = 0.71, p = .642$. Overall, based on the preliminary analyses, the following variables were used as covariates in the model: gender, school, religious commitment, and relationship status.

Hierarchical Multiple Regression Analyses

Hypothesis 1. *It was hypothesized that more parental communication about sex during adolescence would be associated with less risky sexual behavior for African American college students.*

To test this hypothesis two hierarchal multiple regression analyses were conducted to determine the relationship between the predictor variables (mother and father's communication about sex) and the outcome variable (low risk sexual behavior).

The relationship between mother's communication about sex and low risk sexual behavior was analyzed. The total sample for this model was 295 participants. Four covariates (i.e., gender, school, religious commitment, and relationship status) were added into step one of the regression analysis. In the first model 8% of the variance in SSBQ (low risk sexual behavior outcome variable) was accounted for by the covariates (adjusted $R^2 = .08, p < .001$).

In step two, the predictor variable (mother's communication about sex) was added to the model and the change in R^2 was significant, $F(1, 289) = 4.94, p = .027$, adjusted $R^2 = .09$. When mother's communication about sex was added to the model an additional 2% of the variance in SSBQ was accounted for. As expected, mother's communication about sex was positively associated with low risk sexual behavior, above and beyond the controlled predictors, evidencing

a small effect (semipartial $r^2 = .12$). Results of this hierarchal regression analysis are presented in Table 4.

Table 4

Multiple Regression Analyses of Mother's Communication about Sex Predicting Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.31	.09	.09
Gender	-.17	-3.05**	.03			
School	.11	2.03*	.01			
Relationship Status	.14	2.54*	.02			
RCI	.17	2.96**	.03			
Step 2				.33	.11	.02
Gender	-.16	-2.89**	.03			
School	.12	2.17*	.01			
Relationship Status	.16	2.84**	.02			
RCI	.16	2.82**	.02			
PTSRC- M	.13	2.22*	.02			

Note. $N = 295$; PTSRCS-M = Parent-Teen Sexual Risk Communication Scale- Mother; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

Next, the relationship between father's communication about sex and low risk sexual behavior was examined. The total sample for this model was 246 participants. Covariates were added into step one of the regression analysis. In the first model 4% of the variance in SSBQ was accounted for by the covariates (adjusted $R^2 = .04$, $p = .005$). In step two, the predictor variable (father's communication about sex) was added to the model and the change in R^2 was significant, $F(1, 240) = 5.00$, $p = .026$, adjusted $R^2 = .06$. When father's communication about sex was added to the model an additional 2% of the variance in SSBQ was accounted for. As expected, father's communication about sex was positively associated with low risk sexual behavior, above and beyond the controlled predictors, evidencing a small effect (semipartial $r^2 = .14$). Results of this hierarchal regression analysis are presented in Table 5.

Table 5

Multiple Regression Analyses of Father's Communication about Sex Predicting Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.24	.06	.06
Gender	-.13	-2.08*	.02			
School	.11	1.68	<i>ns</i>			
Relationship Status	.15	2.34*	.02			
RCI	.11	1.81	<i>ns</i>			
Step 2				.28	.08	.02
Gender	-.17	-2.67**	.03			
School	.10	1.62	<i>ns</i>			
Relationship Status	.16	2.55*	.02			
RCI	.10	1.67	<i>ns</i>			
PTSRC- F	.15	2.24*	.02			

Note. $N = 246$; PTSRCS-F = Parent-Teen Sexual Risk Communication Scale- Father; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

Hypothesis 1A. *It is hypothesized that more permissive peer sex messages will be associated with more risky sexual behavior for African American college students.*

A hierarchal multiple regression analysis was conducted to determine the relationship between the predictor variables (permissive peer sex messages) and the outcome variable (low risk sexual behavior). The total sample for this model was 301 participants. The covariates were added into step one of the regression analysis. In the first model 8% of the variance in SSBQ was accounted for by the covariates (adjusted $R^2 = .08$, $p < .001$). In step two, the predictor variable (permissive peer sex messages) was added to the model and the change in R^2 was significant, $F(1, 295) = 4.10$, $p = .044$, adjusted $R^2 = .09$. When permissive peer sex messages was added to the model an additional 1% of the variance in SSBQ was accounted for. As expected, permissive peer sex messages was negatively associated with low risk sexual behavior above and beyond the controlled predictors, evidencing a small effect (semipartial $r^2 = -.11$). Results of this hierarchal regression analysis are presented in Table 6.

Table 6

Multiple Regression Analyses of Permissive Peer Sex Messages Predicting Risky Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.31	.10	.10
Gender	-.18	-3.18**	.03			
School	.12	2.20*	.01			
Relationship Status	.14	2.58*	.02			
RCI	.16	2.96**	.03			
Step 2				.33	.11	.01
Gender	-.13	-2.17*	.01			
School	.12	2.25*	.02			
Relationship Status	.15	2.69**	.02			
RCI	.15	2.65**	.02			
SSI	-.12	-2.02*	.01			

Note. $N = 301$; SSI= Sexual Socialization Instrument - Peer Permissive Sex Scale; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

Hypothesis 1B. *It is hypothesized that parental communication about sex during adolescence will moderate the association between permissive peer sex messages and risky sexual behavior for African American college students. As parental communication about sex increases the association between permissive peer sex messages and risky sexual behavior will decrease.*

To test this hypothesis two hierarchal multiple regression analyses were conducted to evaluate if the moderators (mother and father's communication about sex) affected the direction and strength of the association between the predictor variable (permissive peer sex messages) and the outcome variable (low risk sexual behavior).

The degree to which mother's communication about sex affected the association between permissive peer sex messages and low risk sexual behavior was examined through hierarchical multiple regression. The total sample for this model was 295 participants. Covariates were added into step one of the regression analysis. In the first model 8% of the variance in SSBQ was accounted for by the covariates (adjusted $R^2 = .08$, $p < .001$). In step two, the predictor

variables (mother's communication about sex and permissive sex messages) were added to the model and the change in R^2 was significant, $F(2, 288) = 4.11, p = .013$, adjusted $R^2 = .10$. For step three, an interaction term consisting of mother's communication about sex and permissive sex messages was added to the model and the change in R^2 was not significant, $F(1, 287) = 0.81, p = .368$, adjusted $R^2 = .10$. Mother's communication about sex during adolescence did not moderate the association between permissive peer sex messages and risky sexual behavior, above and beyond the controlled predictors. Results of the hierarchical regression analysis are presented in Table 7.

Table 7

Multiple Regression Analyses of Mother's Communication about Sex Moderating the Association between Permissive Peer Sex Messages and Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.31	.09	.09
Gender	-.17	-3.05**	.03			
School	.11	2.03*	.01			
Relationship Status	.14	2.54*	.02			
RCI	.17	3.00**	.03			
Step 2				.35	.12	.03
Gender	-.12	-1.93	<i>ns</i>			
School	.12	2.21*	.01			
Relationship Status	.17	2.95**	.03			
RCI	.14	2.53*	.02			
PTSRC- M	.13	2.23*	.02			
SSI	-.12	-1.96	<i>ns</i>			
Step 3				.35	.12	.00
Gender	-.12	-2.00*	.01			
School	.12	2.15*	.01			
Relationship Status	.17	2.94**	.03			
RCI	.15	2.57*	.02			
PTSRC- M	.13	2.24*	.02			
SSI	-.12	-1.93	<i>ns</i>			
PTSRC- M X SSI	-.05	-.90	<i>ns</i>			

Note. $N = 295$; PTSRC-S-M = Parent-Teen Sexual Risk Communication Scale- Mother; SSI= Sexual Socialization Instrument - Peer Permissive Sex Scale; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

The degree to which father's communication about sex affected the association between permissive peer sex messages and low risk sexual behavior was examined. The total sample for this model was 246 participants. Covariates mentioned above were added into step one of the regression analysis. In the first model 4% of the variance in SSBQ was accounted for by the covariates (adjusted $R^2 = .04$, $p = .005$). In step two, the predictor variables (father's communication about sex and permissive sex messages) were added to the model and the change in R^2 was not significant, $F(2, 239) = 2.86$, $p = .059$, adjusted $R^2 = .06$. For step three, an interaction term consisting of father's communication about sex and permissive sex messages was added to the model and the change in R^2 was not significant, $F(1, 238) = 0.01$, $p = .929$, adjusted $R^2 = .05$. Father's communication about sex during adolescence did not moderate the association between permissive peer sex messages and risky sexual behavior, above and beyond the controlled predictors. Results of the hierarchical regression analysis are presented in Table 8.

Table 8

Multiple Regression Analyses of Father's Communication about Sex Moderating the Association between Permissive Peer Sex Messages and Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.24	.06	.06
Gender	-.13	-2.08*	.02			
School	.11	1.68	<i>ns</i>			
Relationship Status	.15	2.34*	.02			
RCI	.11	1.81	<i>ns</i>			
Step 2				.28	.08	.02
Gender	-.15	-2.18*	.02			
School	.10	1.60	<i>ns</i>			
Relationship Status	.16	2.59*	.03			
RCI	.10	1.48	<i>ns</i>			
SSI	-.06	-.85	<i>ns</i>			
PTSRC- F	.15	2.26*	.02			
Step 3				.28	.08	.00
Gender	-.15	-2.17*	.02			
School	.10	1.59	<i>ns</i>			
Relationship Status	.16	2.59*	.03			
RCI	.09	1.46	<i>ns</i>			
SSI	-.06	-.85	<i>ns</i>			
PTSRC- F	.15	2.23*	.02			
PTSRC- F X SSI	.01	.09	<i>ns</i>			

Note. $N = 246$; PTSRC- F = Parent-Teen Sexual Risk Communication Scale- Father; SSI= Sexual Socialization Instrument - Peer Permissive Sex Scale; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

Hypothesis 1C. *It is hypothesized that more social media sex messages will be associated with more risky sexual behavior for African American college students.*

A hierarchal multiple regression analysis was conducted to determine the relationship between the predictor variable (social media sex messages) and the outcome variable (low risk sexual behavior). The total sample for this model was 265 participants. Covariates were added into step one of the regression analysis. In the first model 8% of the variance in SSBQ was accounted for by the covariates (adjusted $R^2 = .08$, $p < .001$). In step two, the predictor variable (social media sex messages) was added to the model and the change in R^2 was not significant, F

(1, 259) = 0.12, $p = .725$, adjusted $R^2 = .08$. Social media sex messages did not emerge as a significant predictor above and beyond the controlled predictors. Results of the hierarchical regression analysis are presented in Table 9.

Table 9

Multiple Regression Analyses of Social Media Sex Messages Predicting Risky Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.31	.10	.10
Gender	-.20	-3.32**	.04			
School	.11	1.77	<i>ns</i>			
Relationship Status	.15	2.59*	.02			
RCI	.15	2.50*	.02			
Step 2				.31	.10	.00
Gender	-.20	- 3.32**	.04			
School	.11	1.80	<i>ns</i>			
Relationship Status	.15	2.57*	.02			
RCI	.15	2.47*	.02			
SOCIALM	.02	.35	<i>ns</i>			

Note. $N = 265$; SOCIALM = Social Media Messages- Sexual Freedom Subscale; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

Hypothesis 1D. *It is hypothesized that parental communication about sex during adolescence will moderate the association between social media sex messages and risky sexual behavior for African American college students. As parental communication about sex increases the association between social media sex messages and risky sexual behavior will decrease.*

To test this hypothesis two hierarchal multiple regression analyses were conducted to evaluate if the moderators (mother and father's communication about sex) affect the direction and strength of the association between the predictor variable (social media sex messages) and the outcome variable (low risk sexual behavior).

The degree to which mother's communication about sex affected the association between social media sex messages and low risk sexual behavior was examined. The total sample for this

model was 262 participants. Covariates mentioned above were added into step one of the regression analysis. In the first model 8% of the variance in SSBQ was accounted for by the covariates (adjusted $R^2 = .08$, $p < .001$). In step two, the predictor variables (mother's communication about sex and social media sex messages) were added to the model and the change in R^2 was not significant, $F(2, 255) = 2.91$, $p = .056$, adjusted $R^2 = .10$. For step three, an interaction term consisting of mother's communication about sex and social media sex messages was added to the model and the change in R^2 was not significant, $F(1, 254) = 2.11$, $p = .147$, adjusted $R^2 = .10$. Mother's communication about sex during adolescence did not moderate the association between social media sex messages and risky sexual behavior, above and beyond the controlled predictors. Results of the hierarchical regression analysis are presented in Table 10.

Table 10

Multiple Regression Analyses of Mother's Communication about Sex Moderating the Association between Social Media Sex Messages and Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.31	.10	.10
Gender	-.20	-3.32**	.04			
School	.10	1.70	<i>ns</i>			
Relationship Status	.16	2.59*	.02			
RCI	.15	2.47*	.02			
Step 2				.34	.12	.02
Gender	-.19	-3.17**	.03			
School	.11	1.81	<i>ns</i>			
Relationship Status	.17	2.83**	.03			
RCI	.14	2.38*	.02			
PTSRC- M	.14	2.39*	.02			
SOCIALM	.02	.29	<i>ns</i>			
Step 3				.35	.12	.01
Gender	-.18	-3.04**	.03			
School	.11	1.82	<i>ns</i>			
Relationship Status	.16	2.59*	.02			
RCI	.14	2.44*	.02			
PTSRC- M	.14	2.30*	.02			
SOCIALM	.02	.25	<i>ns</i>			
PTSRC- M X SOCIALM	.09	1.45	<i>ns</i>			

Note. $N = 262$; PTSRCS-M = Parent-Teen Sexual Risk Communication Scale- Mother; SOCIALM = Social Media Messages- Sexual Freedom; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$.

The degree to which father's communication about sex affected the association between social media sex messages and low risk sexual behavior was examined. The total sample for this model was 220 participants. Covariates were added into step one of the regression analysis. In the first model 5% of the variance in SSBQ was accounted for by the covariates (adjusted $R^2 = .05$, $p = .004$). In step two, the predictor variables (father's communication about sex and social media sex messages) were added to the model and the change in R^2 was significant, $F(2, 213) = 6.15$, $p = .003$, adjusted $R^2 = .09$. For step three, an interaction term consisting of father's

communication about sex and social media sex messages was added to the model and the change in R^2 was not significant, $F(1, 212) = 0.00, p = .985$, adjusted $R^2 = .09$. Father's communication about sex during adolescence did not moderate the association between social media sex messages and risky sexual behavior, above and beyond the controlled predictors. Results of the hierarchical regression analysis are presented in Table 11.

Table 11

Multiple Regression Analyses of Father's Communication about Sex Moderating the Association between Social Media Sex Messages and Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.26	.07	.07
Gender	-.17	-2.52*	.03			
School	.09	1.34	<i>ns</i>			
Relationship Status	.17	2.58*	.03			
RCI	.10	1.45	<i>ns</i>			
Step 2				.35	.12	.05
Gender	-.24	-3.54***	.05			
School	.08	1.25	<i>ns</i>			
Relationship Status	.19	2.95**	.04			
RCI	.09	1.34	<i>ns</i>			
PTSRC- F	.24	3.50**	.05			
SOCIALM	.00	.02	<i>ns</i>			
Step 3				.35	.12	.00
Gender	-.24	-3.53**	.05			
School	.08	1.24	<i>ns</i>			
Relationship Status	.19	2.93**	.04			
RCI	.09	1.33	<i>ns</i>			
PTSRC- F	.24	3.49**	.05			
SOCIALM	.00	.02	<i>ns</i>			
PTSRC- F X SOCIALM	-.00	-.02	<i>ns</i>			

Note. $N = 220$; PTSRC-S-F = Parent-Teen Sexual Risk Communication Scale- Father; SOCIALM = Social Media Messages- Sexual Freedom; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$.

Hypothesis 2. *It is expected that more parental warmth during adolescence will be associated with less risky sexual behavior for African American college students.*

To test this hypothesis two hierarchical multiple regression analyses were conducted to determine the relationship between the predictor variables (mother and father's warmth) and the outcome variable (low risk sexual behavior).

The relationship between mother's warmth and low risk sexual behavior was analyzed. The total sample for this model was 284 participants. The covariates were added into step one of the analysis. In the first model 8% of the variance in SSBQ (low risk sexual behavior outcome variable) was accounted for by the covariates (adjusted $R^2 = .08$, $p < .001$). In step two, the predictor variable (mother's warmth) was added to the model and the change in R^2 was significant, $F(1, 278) = 17.82$, $p < .001$, adjusted $R^2 = .13$. When mother's warmth was added to the model an additional 5% of the variance in SSBQ was accounted for. Therefore, as expected, mother's warmth was positively associated with low risk sexual behavior, above and beyond the controlled predictors, evidencing a small effect (semipartial $r^2 = .23$). Results of the hierarchical regression analysis are presented in Table 12.

Table 12

Multiple Regression Analyses of Mother's Warmth Predicting Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.30	.09	.09
Gender	-.16	-2.76**	.02			
School	.12	2.13*	.01			
Relationship Status	.14	2.45*	.02			
RCI	.17	2.96**	.03			
				.38	.15	.06
Step 2						
Gender	-.16	-2.77**	.02			
School	.13	2.27*	.02			
Relationship Status	.16	2.91**	.03			
RCI	.10	1.80	<i>ns</i>			
EWARM- M	.24	4.22***	.05			

Note. $N = 284$; EWARM-M = My Memories for Upbringing- Emotional Warmth Scale- Mother; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

Next, the relationship between father's warmth and low risk sexual behavior was examined. The total sample for this model was 194 participants. Covariates mentioned above were added into step one of the regression analysis, and were not significant (adjusted $R^2 = .03$, $p = .034$). In step two, the predictor variable (father's warmth) was added to the model and the change in R^2 was not significant, $F(1, 188) = 0.90$, $p = .343$, adjusted $R^2 = .03$. Father's warmth did not emerge as a significant predictor above and beyond the controlled predictors. Results of the hierarchical regression analysis are presented in Table 13.

Table 13

Multiple Regression Analyses of Father's Warmth Predicting Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.23	.05	.05
Gender	-.16	-2.30*	.03			
School	.09	1.26	<i>ns</i>			
Relationship Status	.10	1.42	<i>ns</i>			
RCI	.12	1.65	<i>ns</i>			
Step 2				.24	.06	.01
Gender	-.15	-1.96	<i>ns</i>			
School	.08	1.16	<i>ns</i>			
Relationship Status	.11	1.49	<i>ns</i>			
RCI	.10	1.39	<i>ns</i>			
EWARM- F	.07	.95	<i>ns</i>			

Note. $N = 194$; EWARM-F = My Memories for Upbringing- Emotional Warmth Scale- Father; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

Hypothesis 2A. *It is hypothesized that parental warmth will moderate the association between permissive peer sex messages and risky sexual behavior for African American college students. As parental warmth increases the association between permissive peer sex messages and risky sexual behavior will decrease.*

To test this hypothesis two hierarchal multiple regression analyses were conducted to evaluate if the moderators (mother and father's warmth) affect the direction and strength of the

association between the predictor variable (permissive peer sex messages) and the outcome variable (low risk sexual behavior).

The degree to which mother's warmth affected the relationship between permissive peer sex messages and low risk sexual behavior was examined. The total sample for this model was 284 participants. Covariates were added into step one of the regression analysis. In the first model 8% of the variance in SSBQ was accounted for by the covariates (adjusted $R^2 = .08$, $p < .001$). In step two, the predictor variables (mother's warmth and permissive sex messages) were added to the model and the change in R^2 was significant, $F(2, 277) = 11.26$, $p < .001$, adjusted $R^2 = .14$. For step three, an interaction term consisting of mother's warmth and permissive sex messages was added to the model and the change in R^2 was not significant, $F(1, 276) = 0.01$, $p = .975$, adjusted $R^2 = .14$. Mother's warmth during adolescence did not moderate the association between permissive peer sex messages and risky sexual behavior, above and beyond the controlled predictors. Results of the hierarchical regression analysis are presented in Table 14.

Table 14

Multiple Regression Analyses of Mother's Warmth Moderating the Association between Permissive Peer Sex Messages and Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.30	.09	.09
Gender	-.16	-2.76**	.02			
School	.12	2.13*	.01			
Relationship Status	.14	2.45*	.02			
RCI	.17	2.96**	.03			
Step 2				.40	.16	.07
Gender	-.10	-1.71	<i>ns</i>			
School	.13	2.35*	.02			
Relationship Status	.17	2.99**	.03			
RCI	.09	1.47	<i>ns</i>			
EWARM- M	.24	4.18***	.05			
SSI	-.13	-2.12*	.01			
Step 3				.40	.16	.00
Gender	-.10	-1.70	<i>ns</i>			
School	.13	2.35*	.02			
Relationship Status	.17	2.98**	.03			
RCI	.09	1.46	<i>ns</i>			
EWARM- M	.24	4.15***	.05			
SSI	-.13	-2.10*	.01			
EWARM-M X SSI	-.00	-.03	<i>ns</i>			

Note. $N = 284$; EWARM-M = My Memories for Upbringing- Emotional Warmth Scale- Mother; SSI = Sexual Socialization Instrument - Peer Permissive Sex Scale; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

The degree to which father's warmth affected the association between permissive peer sex messages and low risk sexual behavior was examined. The total sample for this model was 194 participants. Covariates were added into step one of the regression analysis, and the model was not significant (adjusted $R^2 = .03$, $p = .034$). In step two, the predictor variables (father's warmth and permissive sex messages) were added to the model and the change in R^2 was not significant, $F(2, 187) = 1.30$, $p = .275$, adjusted $R^2 = .04$. For step three, an interaction term consisting of father's warmth and permissive sex messages was added to the model and the change in R^2 was not significant, $F(1, 186) = 1.29$, $p = .258$, adjusted $R^2 = .04$. Father's warmth

did not moderate the association between permissive peer sex messages and risky sexual behavior, above and beyond the controlled predictors. Results of the hierarchical regression analysis are presented in Table 15.

Table 15

Multiple Regression Analyses of Father's Warmth Moderating the Association between Permissive Peer Sex Messages and Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.23	.05	.05
Gender	-.16	-2.30*	.03			
School	.09	1.26	<i>ns</i>			
Relationship Status	.10	1.42	<i>ns</i>			
RCI	.12	1.65	<i>ns</i>			
Step 2				.26	.06	.01
Gender	-.10	-1.26	<i>ns</i>			
School	.08	1.12	<i>ns</i>			
Relationship Status	.11	1.58	<i>ns</i>			
RCI	.09	1.15	<i>ns</i>			
EWARM- F	.07	.91	<i>ns</i>			
SSI	-.10	-1.30	<i>ns</i>			
Step 3				.27	.07	.01
Gender	-.11	-1.37	<i>ns</i>			
School	.08	1.10	<i>ns</i>			
Relationship Status	.12	1.70	<i>ns</i>			
RCI	.08	1.11	<i>ns</i>			
EWARM- F	.09	1.16	<i>ns</i>			
SSI	-.09	-1.14	<i>ns</i>			
EWARM-F X SSI	-.08	-1.14	<i>ns</i>			

Note. $N = 194$; EWARM-F = My Memories for Upbringing- Emotional Warmth Scale- Father; SSI = Sexual Socialization Instrument - Peer Permissive Sex Scale; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

Hypothesis 2B. *It is hypothesized that parental warmth will moderate the association between social media sex messages and risky sexual behavior for African American college students. As parental warmth increases the association between social media sex messages and risky sexual behavior will decrease.*

To test this hypothesis two hierarchical multiple regression analyses were conducted to evaluate if the moderators (mother and father's warmth) affect the direction and strength of the association between the predictor variable (social media sex messages) and the outcome variable (low risk sexual behavior).

The degree to which mother's warmth affected the association between social media sex messages and low risk sexual behavior was examined. The total sample for this model was 254 participants. Covariates were added into step one of the regression analysis. In the first model 7% of the variance in SSBQ was accounted for by the covariates (adjusted $R^2 = .07$, $p < .001$). In step two, the predictor variables (mother's warmth and social media sex messages) were added to the model and the change in R^2 was significant, $F(2, 247) = 8.86$, $p < .001$, adjusted $R^2 = .13$. For step three, an interaction term consisting of mother's warmth and social media sex messages was added to the model and the change in R^2 was not significant, $F(1, 246) = 0.37$, $p = .544$, adjusted $R^2 = .12$. Mother's warmth during adolescence did not moderate the association between social media sex messages and risky sexual behavior, above and beyond the controlled predictors. Results of the hierarchical regression analysis are presented in Table 16.

Table 16

Multiple Regression Analyses of Mother's Warmth Moderating the Association between Social Media Sex Messages and Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.29	.09	.09
Gender	-.18	-2.93**	.03			
School	.11	1.77	<i>ns</i>			
Relationship Status	.14	2.30*	.02			
RCI	.15	2.46*	.02			
Step 2				.38	.15	.06
Gender	-.17	-2.92**	.03			
School	.12	1.93	<i>ns</i>			
Relationship Status	.17	2.80**	.03			
RCI	.08	1.30	<i>ns</i>			
EWARM- M	.26	4.16***	.06			
SOCIALM	.05	.91	<i>ns</i>			
Step 3				.39	.15	.00
Gender	-.17	-2.91**	.03			
School	.12	1.94	<i>ns</i>			
Relationship Status	.16	2.71**	.03			
RCI	.08	1.30	<i>ns</i>			
EWARM- M	.25	3.98***	.05			
SOCIALM	.05	.88	<i>ns</i>			
EWARM-M X SOCIALM	.04	.61	<i>ns</i>			

Note. $N = 254$; EWARM-M = My Memories for Upbringing- Emotional Warmth Scale- Mother; SOCIALM = Social Media Messages- Sexual Freedom; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

The degree to which father's warmth affected the association between social media sex messages and low risk sexual behavior was examined. The total sample for this model was 173 participants. Covariates were added into step one of the regression analysis. In the first model 5% of the variance in SSBQ was accounted for by the covariates (adjusted $R^2 = .05$, $p = .019$). In step two, the predictor variables (father's warmth and social media sex messages) were added to the model and the change in R^2 was not significant, $F(2, 166) = 0.83$, $p = .439$, adjusted $R^2 = .04$. For step three, an interaction term consisting of father's warmth and social media sex

messages was added to the model and the change in R^2 was not significant, $F(1, 165) = 1.68, p = .197$, adjusted $R^2 = .05$. Father's warmth during adolescence did not moderate the association between social media sex messages and risky sexual behavior, above and beyond the controlled predictors. Results of the hierarchical regression analysis are presented in Table 17.

Table 17

Multiple Regression Analyses of Father's Warmth Moderating the Association between Social Media Sex Messages and Low Risk Sexual Behavior

Predictor Variables	β	t	sr^2	R	R^2	ΔR^2
Step 1				.26	.07	.07
Gender	-.22	-2.92**	.05			
School	.07	.94	<i>ns</i>			
Relationship Status	.11	1.42	<i>ns</i>			
RCI	.09	1.25	<i>ns</i>			
Step 2				.28	.07	.01
Gender	-.19	-2.46*	.03			
School	.06	.81	<i>ns</i>			
Relationship Status	.11	1.51	<i>ns</i>			
RCI	.07	.94	<i>ns</i>			
EWARM- F	.10	1.27	<i>ns</i>			
SOCIALM	.01	.10	<i>ns</i>			
Step 3				.29	.09	.01
Gender	-.19	-2.47*	.03			
School	.06	.85	<i>ns</i>			
Relationship Status	.12	1.54	<i>ns</i>			
RCI	.07	.85	<i>ns</i>			
EWARM- F	.12	1.43	<i>ns</i>			
SOCIALM	.01	.89	<i>ns</i>			
EWARM-F X SOCIALM	.10	.20	<i>ns</i>			

Note. $N = 173$; EWARM-F = My Memories for Upbringing- Emotional Warmth Scale- Father; SOCIALM = Social Media Messages- Sexual Freedom; RCI = Religious Commitment Inventory; * $p < .05$, ** $p < .01$, *** $p < .001$

Exploratory Research Analyses

Question 1. *Are parental communications about sex or parental warmth differentially associated with risky sexual behavior for African American college students?*

The exploratory hypothesis was examined through two linear regression analyses to determine whether parental communication about sex or parental warmth accounts for more variance when the outcome variable is less risky sexual behavior.

To analyze predictors involving mothers (mother's communication about sex and mother's warmth) both predictors were added to the model simultaneously with the outcome variable being low risk sexual behavior. The total sample for this model was 282 participants. Mother's warmth was significant ($\beta = 0.26$, $SE = 0.16$, $p < .001$) and accounted for 23% of the variance (semipartial $r^2 = .23$) in the outcome variable (low risk sexual behavior). Mother's communication about sex was not significant ($\beta = 0.00$, $SE = 0.07$, $p = .973$, semipartial $r^2 = .00$).

To analyze predictors involving father (father's communication about sex and father's warmth) both predictors were added to the model simultaneously with the outcome variable being low risk sexual behavior. The total sample for this model was 190 participants. Father's warmth was not significant ($\beta = 0.11$, $SE = 0.17$, $p = .140$, semipartial $r^2 = .11$), and father's communication about sex was not significant ($\beta = -0.02$, $SE = 0.08$, $p = .786$, semipartial $r^2 = -.02$).

Question 2. *Are permissive peer sex messages or social media sex messages differentially associated with risky sexual behavior for African American college students?*

The exploratory hypothesis was examined through a linear regression analysis to determine if permissive peer sex messages or social media sex messages accounts for more variance when the outcome variable is less risky sexual behavior. The total sample for this model was 265 participants. Both predictors were added to the model simultaneously with the outcome variable being low risk sexual behavior. Permissive peer sex messages was significant

($\beta = -0.20$, $SE = 0.09$, $p = .001$) and accounted for 20% of the variance (semipartial $r^2 = .20$) in the outcome variable (low risk sexual behavior). Social media sex messages was not significant ($\beta = 0.02$, $SE = 0.11$, $p = .725$, semipartial $r^2 = .02$).

CHAPTER IV

DISCUSSION

The present study examined how parental factors (parental warmth and parental communication about sex) are related to the association between permissive sex influences (peer and social media sex messages) and risky sexual behavior for African American college students. Several hypotheses were supported. First, more parental communication about sex during adolescence by both mothers and fathers (evaluated separately) were associated with less risky sexual behavior (Hypothesis 1). Further, more permissive peer sex messages were associated with more risky sexual behavior (Hypothesis 1A). However, parental communication about sex by mothers or fathers during adolescence did not moderate the association between permissive peer sex messages and risky sexual behavior (Hypothesis 1B). Similarly, more social media sex messages were not associated with more risky sexual behavior (Hypothesis 1C) and parental communication about sex during adolescence by mothers or fathers did not moderate the association between social media sex messages and risky sexual behavior (Hypothesis 1D). More parental warmth during adolescence was associated with less risky sexual behavior, however this was only true for mothers and not for fathers (Hypothesis 2). The expectation that parental warmth would moderate the association between permissive peer sex messages and risky sexual behavior (Hypothesis 2A) or would moderate the association between social media sex messages and risky sexual behavior (Hypothesis 2B) was not supported for mothers or fathers.

Further, two exploratory questions examined whether (1) parental communication and parental warmth had differential effects on risky sexual behaviors and (2) permissive peer sex messages and permissive social media sex messages had a differential effect on risky sexual

behaviors. More mothers' warmth predicted less risky sexual behaviors whereas mother's communication about sex did not. There were no differential effects for fathers' warmth or communication about sex on risky sexual behaviors. Finally, there was a differential effect found in type of permissive sex messages with peer sex messages predicting risky sexual behaviors.

Parenting Factors: Communication about Sex and Parental Warmth

Guided by a review of adolescent sexual behavior literature and the Parent-Based Expansion of the Theory of Planned Behavior (PETPB; Hutchinson & Wood, 2007) a conceptual framework for the present study was developed. The PETPB highlights the importance of the family system on risk behaviors, including particular parental factors (Hutchinson & Wood, 2007). Consistent with previous literature that identifies parental communication about sex during adolescence as a protective factor against risky sexual behavior (DiClemente et al., 2001a; Miller et al., 1999; Weinman, Small, Buzi, & Smith, 2008), the present study found that both maternal and paternal communication about sex were associated with less risky sexual behaviors for African American college students. These findings are parallel to a study that found greater conservative sexual attitudes and beliefs were adopted by African American college students when they endorsed a higher frequency of sexual risk conversations with their parents (Hutchinson & Wood, 2007).

Parental warmth during adolescence has been linked to lower rates of risky sexual behavior and fewer STIs for adolescents and emerging adults (Akers, Holland, & Bost, 2011; Hahm et al., 2008; Miller et al. 1999; Regnerus & Luchies, 2006). Interestingly, however, in the present study only maternal warmth was found to predict low risky sexual behavior. To better understand this finding, literature on fathers' support in African American homes was reviewed.

According to Coley (2001), in 1993, 70% of African American children did not live with their biological fathers, representing a possible lack of fathers' emotional involvement with their children (Lerman, 1993). Participants in the current study were born between 1987 and 1993. Moreover, 19% of participants in the current study indicated having no biological father or father-like adult figure in their lives while growing up, and of the 40.1% of participants who were raised by a single biological parent, only 1.8% indicated they were raised by their father, in comparison to 38.3% being raised by their mother. These data are similar to other studies which have found African American mothers to be more involved in child rearing than fathers (Ahmeduzzaman & Roopnarine, 1992), and that maternal relationships are perceived as most significant by African American college students (D'Augelli & Hershberger, 1992).

Permissive Peer Sex Messages vs. Social Media Sex Messages

Permissive peer sex messages proved to be a salient factor in this study and were related to greater risky sexual behavior among African American college students. This finding is consistent with prior research on emerging adults which suggests having more frequent discussions about sexual feelings and behaviors with friends predict greater sexual activity (Chernoff & Davison 2005; Gibbons et al. 1995; Lefkowitz & Espinosa-Hernandez, 2007; Martens et al. 2006; Scholly et al. 2005; Seal & Agostinelli 1996; Wallace et. al., 2008). In the current study, an interesting finding regarding permissive peer sex messages was that they significantly accounted for more variance when compared to permissive social media sex messages. Additionally, in the present study there was almost a zero correlation found between peer permissive sex messages and social media permissive sex messages. Literature on peer connections within SNS was reviewed to better understand these findings.

It has been found that SNS serve as an extension to established direct peer interactions (Zhang & Leung, 2014) and that students use SNS to strengthen offline peer connections (Subrahmanyam et al., 2008). Yet, another study found that undergraduate students only consider 25% of their Facebook friends actual friends (Ellison et al., 2007). A few studies suggest that Snapchat, which is a social media platform that allows users to send images, videos, and text with a specified amount of time for the receiver(s) to view the content before it becomes permanently inaccessible to the receiver (Vaterlaus, Barnett, Roche, & Young, 2016), is the most intimate among SNS. Utz, Muscanell, and Khalid (2015) compared Snapchat and Facebook and found that Snapchat was used more with close friends and partners, whereas Facebook was used to communicate with more distant friends or associates. These results are in line with Roesner, Gill, & Kohno (2014) who found that users have small and close social networks on Snapchat compared to Facebook. Overall, it was found that people use Snapchat to enhance relatively strong emotional ties within their close peer social circles, rather than cultivate larger, weak social networks, like in case of Facebook (Piwek & Joinson, 2016).

Given the above research supporting that SNS can serve as an extension of close peer communication, it may be that African American emerging adults receive less sexually permissive messages (e.g., through SNS) compared to direct vocalized permissive peer sex messages. However, the current study collapsed SNS and given the research indicating that each platform is used differently, it is possible that the measure used was not sensitive enough to capture the influence of SNS on sexual behaviors in this population. However, it is also possible that permissive social media sex messages may not hold as much value as permissive peer messages sex received during offline interactions.

Understanding Social Media Sex Messages

Despite the lack of finding for social media sex messages on risky behaviors in this study it is important to speculate on reasons why social media were not significant given that technology is part of contemporary young adult (18 to 25 years old) life (Coyne, Padilla-Walker, & Howard, 2013; Vaterlaus, Jones, Patten, & Cook, 2015). Previous literature suggests young adults (18 to 29 years old) are the most frequent users of SNS (Pew Research Internet Project, 2013) with 89% of this population reporting SNS use (Brenner & Smith, 2013). The present study found similar percentages, with 88% of the sample reporting SNS use, and 83.1% indicating it is part of their everyday activity.

In the current study participants' self-report of permissive social media sex messages were examined given that previous researchers have found college students to (1) view social media often and (2) use SNS profiles to display sexual messages (Moreno, Swanson, Royer, & Roberts, 2011) including sexually permissive messages (Holloway et al., 2014). In the Moreno et al. (2011) study, which focused solely on Facebook use, 24% of participants' profiles included sexual content (e.g., pictures in undergarments, self-disclosure of sexual experiences, etc.). In the present study over half of the sample (54.3%) indicated the people they follow on social media think it is cool to post pictures of themselves where they are either scantily dressed or insinuating sex. Given the previously cited research, as well as research suggesting SNS use is a predictor of STI risk (Moreno et al., 2011; Young & Rice, 2011), the results of the present study were both surprising and contradictory. To explain this inconsistency additional research on social media was reviewed.

A study by Wang, Chen, and Liang (2011), which investigated a limited sample ($n = 16$) of undergraduate students' social media use, found that 45% of their sample spent 6 to 8 hours

per day checking SNS, while 23% spent more than 8 hours. Although the limited sample does not allow for generalizability, it does demonstrate an example of high social media frequency. Moreover, other researchers have found that college students spend a vast amount of time using SNS (Cookingham & Ryan, 2015; Duggan & Smith, 2013; Pew Research Internet Project, 2013). Compared to these studies, a high frequency of SNS use was not found in the present study; only 18% of the sample reported spending greater than three hours a day on social media within the last week, and the majority (77.1%) reported spending less than three hours per day on SNSs. Hence, participants in the present study reported less frequent social media use. Consequently, they may be less exposed to permissive sex messages via SNS which may partly account for the null finding between permissive social media sex messages and risky sexual behavior.

Furthermore, research has supported that emerging adults use certain SNS more frequently than others. In a study of undergraduate students by Piwek and Joinson (2016) participants reported using Facebook, Instagram, and Twitter, with Snapchat being the most frequently used SNS. This is consistent with other data which found that the largest numbers (41%) of adults who use Snapchat are young adults (18 to 29 years old; Duggan, 2015). Snapchat was found to be the most popular SNS used in the current study. Specifically, when participants were asked which SNS they use most often they reported Facebook (45%), Instagram (43%), Twitter (32%), and Snapchat (65%), and 82% reported having a Snapchat account.

There is a paucity of research available on content people share and receive on Snapchat. Vaterlaus et al. (2016) found that although Snapchat has been deemed by some as a platform for sexting (i.e., sending sexual images via text messaging) when young adults were asked about the

content they sent via Snapchat they reported sending funny things (98.7%), pictures of themselves (85.7%), and pictures of what they were doing (85.7%), whereas only 13% reported using it for sexting. Furthermore, Roesner Gill, and Kohno (2014) indicated that less than two percent of adults (18 to 64 years old) in the United States used Snapchat primarily for sexting. Therefore, although participants in the present study use Snapchat quite frequently, this mode of social media does not seem to be a vehicle for promoting risky sexual behaviors for emerging adults, as most users primarily communicate regularly with close friends (Roesner et al., 2014 & Utz et al., 2015) who do not expose them to sexualized content at high rates (Utz et al., 2015; Vaterlaus et al., 2016).

Differences by School

This study was unique because it evaluated factors associated with sexual behaviors of participants attending an HBCU and a PWI that may have implications for interventions. Approximately, 88% of the HBCU and 91% of the PWI samples reported being sexually active. This is higher than national data which indicates that approximately 75% of college students are sexually active (Buhi, Marhefka, & Hoban, 2010). The present study found that participants attending the PWI reported significantly riskier sex compared to participants at the HBCU. One possible factor explaining this finding is classification. Prior research suggests college underclassmen experiment more sexually compared to upperclassmen (Siegel, Klein, & Roghmann, 1999). In the present study there were more freshmen and sophomore participants from the PWI (55.3%) than the HBCU (39.9%), and educational attainment has been associated with less risky sexual behavior (DePadilla, et al., 2011; Painter et al., 2012). Underclassmen students are typically younger in age and research has continued to support that younger adults engage in more risky behavior, including sexual behavior (CDCa, 2013; Painter et al., 2012).

Consequently, both classification and age related factors likely partially contributed to the finding that participants from the PWI reported more risky sexual behavior.

Another explanation for the aforementioned finding could be alcohol use. African American college students report lower levels of heavy drinking than White students (Chen, Dufour & Yi, 2004; Wechsler, Lee, Nelson, & Kuo, 2002), and have a greater number of “protective behaviors,” such as eating before drinking, and counting drinks consumed (Siebert, et. al, 2003). Thus, research suggests that attending a PWI, compared to a HBCU may be associated with greater alcohol use. Kapner (2008) found that African American students at PWIs are more likely to consume alcohol and binge drink than those attending an HBCU. Additionally, Wechsler et al. (1995) reports that African American students from HBCUs hold more negative associations with alcohol use, which are related to less binge drinking among this group. In the current study 40.6% of participants from an HBCU reported *never* drinking alcoholic beverages prior to or during sexual intercourse, compared to 34.8% of participants from a PWI. Therefore, in the present study, it is possible that students at the PWI tend to engage in more hazardous drinking behavior, which is a significant predictor of greater risky sexual behavior (Hess et al., 2015; Townshend, et al., 2014).

In the present study, despite HBCU students reporting less risky sexual behavior overall, it was found that this population reported a greater history of STIs (HBCU = 21.9%; PWI = 13%) and more sexual partners (10 or more) throughout their lifetime (HBCU = 19.1%; PWI = 13.8%). It is important to note that the HBCU population contained more upperclassmen (HBCU = 60.1%; PWI = 44.7%), who generally tend to be older and consequently more sexually experienced, which may help to explain the data. Although these findings seem to suggest students attending a HBCU would be at greater risk for HIV and other STIs, the students at the

PWI reported more recent risky sexual behaviors. For example, 23.7% of students attending a PWI, compared to 17.8% of students at a HBCU reported having vaginal intercourse without a condom 10 or more times in the past 3 months. In terms of being tested for STIs (e.g., gonorrhea, chlamydia, syphilis, and herpes) more students attending the HBCU indicated being tested (HBCU = 76.4%; PWI = 69.1%). Regarding HIV testing, 15.5% more HBCU students reported ever being tested (HBCU = 70.3%; PWI = 54.8%). According to Mongkuo, Mushi, and Thomas (2010) students at a HBCU were found to be quite knowledgeable about HIV/AIDS, and transmission modes. This finding paired with the STI testing data from the present study suggests that participants attending the HBCU may be well educated on the direct risks associated with not using a condom partially because they report greater STI rates. Altogether, the HBCU students may currently protect themselves at higher rates when having sex and be more likely to get tested for STIs (including HIV) and this may be likely because more students from this population (1) have had an STI, (2) have had more sexual experiences overtime, and (3) the sample is comprised of majority upperclassmen. Lastly, it is important to note during the time of data collection a personal communication program offering sexual health awareness education and frequent HIV and STI testing was available to students on the HBCU campus. The availability of this program likely contributed to some of the differences found among schools.

Parental Protective Factors vs. Permissive Sex Messages

Past research on adolescents and young adults has demonstrated that permissive peer sex messages have a positive relationship to risky sex (Kinsman, et al., 1998; Kirby, 2002; Magnani et al., 2001; Romer et al., 1994; Stanton et al., 2002; Upadhyay & Hindin, 2006), and can be more salient than parental factors (Lefkowitz & Espinosa-Hernandez, 2007). Nevertheless, there

is research which suggests that African American college students could be uniquely influenced more by parents over peers based on studies that find greater levels of intimacy within African American families compared to other racial groups (D'Augelli & Hershberger, 1992; Kane, 1998; Kane & Erdman, 1998). Moreover, there are a few studies on African American college students that evidence a decreased likelihood that peer permissive sex messages will predict risky sexual behavior over certain parental influences (Hoskins & Simons, 2015; Metzler et al., 1994; Roberts et al., 2012). In the present study parental factors (e.g., parental warmth and communication about sex) did not moderate the relationship between permissive sex messages (e.g., peer and social media messages) and risky sexual behavior. These null findings suggest that although parental factors are important for African American college students, they do not seem to serve as a buffer against peer influence in terms of risky sexual behavior.

An explanation for the null findings may be associated with the developmental period (e.g., emerging adulthood) of those in the current study. Since undergraduates report spending about 23 hours per week within peer systems (Finlay, et al., 2012) they most certainly have pronounced opportunities to learn permissive sex messages from peers. Trinh (2014) suggests regular contact with peers likely fosters more frequent communication about topics of sex. Additionally, research suggests a strong association between peer norms, sexual attitudes, and sexual behaviors (Landor et al., 2011; Wallace et al., 2008). In sum, given the results of the current study it appears that both peers and parents play a vital role in the influence of risky sexual behavior for African American college students, yet parental factors are not found to buffer peer influences.

Limitations of the Present Study

A number of limitations are present in the current study. First, the study is cross-sectional in design. Cross sectional data limits researchers' ability to conclude causal directionality. Therefore, we cannot conclude with certainty that maternal warmth or parental communication about sex directly cause less risky sexual behavior for African American college students. We also cannot conclude that being exposed to more permissive peer sex messages causes greater risky sexual behavior. For example, it is plausible that African American college students' sexual attitudes and perceived peer norms influence safe sex practices, which research has supported (Chernoff & Davison, 2005; Kogan et al., 2013; Scholly et al., 2005)

Secondly, the study relies entirely on self-report data, thus the results are subjected to response biases including social desirability. Specifically, honesty from participants could be a concern in this study due to several questions assessing overtly personal information including sexual behavior and drug use. In general, social psychology research suggests that notable effects of social desirability bias can be found with topics considered taboo by participants (e.g., sex, violence, etc.). For example, Lewontin (1995) argued that self-reports of sexual behavior are unreliable due to multiple sources of bias, including under-reports of stigmatized behaviors and over-reports of normative behaviors. However, a recent study by Crutzen and Göritz (2010) suggests millennials (those born between 1981 and 1997) tend to be more honest in their reporting of health risk behaviors than young adults of the past. It may be that health risk behaviors among millennials are more normative than for past generations, or that the social distance and impersonal nature of web-based data collection may lead to less social desirability bias. Also, computer administration and having data collected anonymously may have reduced some biases. In an experimentally manipulated study by Brown and Venable (2009) females

were found to self-report certain sexual behaviors under more conservative privacy conditions. Nevertheless, given the nature of the present study it is important to take into account possible effects of social desirability due to the outcome variable.

Another limitation is that the present study relied on retrospective accounts, which are subject to biases and inaccuracies. Also, the sample was largely homogeneous, such that it is composed of mostly African American females (77.4%), which limits understanding of the results for African American males or other minority populations. Although the sample was predominately female, which can serve as a possible gender skew of the findings, the gender make-up of the Universities appear comparable to the gender breakdown of the sample. Additionally, we do not know what factors may have influenced those who chose to participate in the study and those who elected not to. Who chose to participate and why could add pertinent information to our study. Possibly, those who had more sexual experience and/ or who hold more permissive views on sex may have elected to participate, yielding results to reflect greater risky sexual behavior. Another limitation is that risk was examined only for those who were sexually active. It is possible that those with no risk (i.e. not sexually active) have more communication about sex and greater warmth than those who were sexually active. Choosing an alternative outcome measure would have addressed this issue. For example, the Sexual Risk Survey (SRS; Turchik and Garske, 2009) is scored on a continuum that would have allowed those who have never had sex to be included in the present study.

Additionally, the parental predictor variables (mother's communication about sex, father's communication about sex, mother's warmth, and father's warmth) had disparate *N* sizes due to differences in instructions used among the measures. On the parental communication measures (PTSRCS-M, PTSRCS-F) participants were given a more broad definition of

mother/father (i.e., biological mother, step-mother, guardian, or other female parent like adult) while on the parental warmth measures (EWARM-M, E-WARM-F) the definition was restricted (i.e., biological or adoptive mother). Therefore, the warmth measures had smaller *N* sizes likely because participants were thinking of only their biological or adoptive parent(s). In sum, some of the measures used in the present study were skipped by participants, which led to decreased power to detect small meaningful effects for certain analyses.

Permissive social media messages were measured using a modified version of a scale that originally assessed for parent, peer, and media (TV/movies) sexual values and messages (Sexual Freedom Subscale; Epstein & Ward, 2008). It appears that the measure may not have been sensitive enough to capture the effects of distinct social media sex messages because it collapsed all types of SNS. Research suggests there are differences in types of messages received among SNS platforms (Roesner et al., 2014; Utz et al., 2015; Vaterlau et al., 2016; Young, Rivers, & Lewis, 2014) which were not accounted for in the present study. This could have contributed to the insignificant results found for analyses that included social media sex messages.

Furthermore, the sexual freedom subscale of the social media sexual messages measure was evaluated for possible psychometric issues. The sexual freedom subscale was normally distributed with no floor or ceiling effects. Additionally, the amount of missing data across items was comparable. The range for each item was three, meaning participants' answers were variable across items. Each subscale item seemed to work similarly (item level means ranged from 1.38 to 1.96). Validity information in a study by Epstein and Ward (2008) on the sexual freedom subscale of the social media measure that was used in the study was reviewed to see if there was data to support an issue with the measure, and no validity concerns were found. Consequently, it does not seem that the social media measure had psychometric issues, but that

the null findings may be an issue of sensitivity as highlighted above. In conclusion, despite limitations, the results of the current study begin to address the gaps within the literature on risky sexual behavior and take an important first step in examining factors related to social media sex messages for African American emerging adults.

Future Directions

The current study builds upon the paucity of sexual health literature focused on African American college students and emerging adults. Moreover, the study addresses a gap in the literature by examining the role of permissive social media sex messages on risky sexual behavior. Results of this study, in conjunction with its limitations, reveal important next steps for future research. First, future research would benefit from extending the present study's findings to include individuals who have never engaged in sexual behavior. That is, research should aim to better understand the role of parents and peer relationships on who have engaged in sexual behavior and those who have not. Including the latter can reveal insightful findings regarding protective factors for those who have chosen not to engage in sexual behavior.

Furthermore, it is recommended that future researchers use a mixed-method design which would incorporate both qualitative and quantitative methods. Through qualitative examination researchers can work toward understanding why individuals choose to engage in risky sexual behavior, or why they decide not to. In addition, future research should be longitudinal to help better understand additional variables that link parental factors, peer factors, and social media factors to risky sexual behavior. Participants in the current study reported receiving a moderate level of permissive sex messages from their social media sites which may have affected the findings. Exploring this factor longitudinally using a measure created to directly assess

permissive social media messages across different SNS could strengthen the study, and reveal more information about social media practices among emerging adults.

In the present study 59% of the HBCU sample and 21% of the PWI sample were eliminated due to participants being older than age 25 ($n = 156$). Future research would benefit from including older subjects in their sample to analyze for differences by age, which previous research has supported. Adefuye and colleagues (2009) found that older students (30 years old and up) were less likely to report risky sexual behaviors (e.g., multiple partners). Exploring factors attributing to risky sexual behaviors of undergraduate African American college students over age 25 would greatly add to the sexual health literature, given that this population is still disproportionately at risk for HIV (Kennedy, Nolen, Applewhite & Waiters, 2007; Kennedy, Nolen, Applewhite, Pan, Shamblen & Vanderhoff, 2007; Kennedy, Nolen, Applewhite, Waiters & Vanderhoof, 2007).

There is recent literature supporting that African American college students and graduates look differently than their same aged peers who do not attend college in regards to sexual risk behavior and negative outcomes from such behavior (Painter, et al., 2012; Shegog, Lindley, Thompson-Robinson, Simmons, & Richter, 2012). Whiteley et al. (2011) and Young and Rice (2011) found that within a community sample of African Americans SNS use is an important predictor for STI risk. Consequently, this population may be more likely to be influenced by social media factors. In order to gain a better understanding on how permissive social media sex messages impact African Americans within the community, further research should be conducted with this population, given their high rates of STIs (Aicken, Nardone, Mercer, 2010; Bersamin et al., 2012; Snipes, & Benotsch, 2013).

Lastly, there is a great need to provide quality STI prevention programs and sexual health education services to the African American emerging adult population. A prior study found using visual sexual health aids, such as posters about negative consequences of unsafe sex, can increase condom use and reduce STIs (Garcia-Retamero, & Cokely, 2014). Research efforts that provide sexual health education as well as STI testing opportunities would be most beneficial at reducing STIs. Since peers were found to be a salient factor to risky sexual behavior in the present study, including peers in intervention efforts on college campuses will likely be beneficial for African American college students. Given that alcohol use predicts risky sexual behavior (Hess et al., 2015; Townshed, et al., 2014), including educational substance use components during campus interventions is also needed, especially at PWIs where binge drinking is more widely accepted and occurs more regularly (Kapner, 2008). Finally, parents should always be involved in adolescent risk reduction intervention efforts and be encouraged to continue supporting their adolescents through emerging adulthood.

CHAPTER V

CONCLUSION

The relationship between parents and emerging adults, as well as the communication about sex that takes place within those relationships are important factors that have been related to less risky sexual behaviors for college students. Peer influences, such as permissive peer sex messages, are related to more risky sexual behaviors among emerging adults. The present study was the first to evaluate these factors in addition to permissive social media sex messages. Overall, the findings revealed that parental protective factors have a positive association with safer sexual behaviors. Specifically, maternal and paternal communication about sex during adolescence and maternal warmth were positively associated with low risk sexual behavior for African American college students. In terms of peer influence, permissive peer sex messages were associated with high risk sexual behavior. Contrary to our expectations, social media sex messages were not related to risky sexual behavior. Overall, these results highlight the importance of parental influence on the sexual behavior of African American college students. Based on the findings mothers and fathers should be included in adolescent risk reduction intervention efforts and be encouraged to support their adolescents as they mature through emerging adulthood, particularly during college years. Additionally, peer influences should also continue to be emphasized in interventions with this population.

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APPENDIX A

PARTICIPANT NOTIFICATION STATEMENT OLD DOMINION UNIVERSITY

PROJECT TITLE: PROJECT SEX MESSAGES

INTRODUCTION

The purposes of this form are to give you information about PROJECT SEX MESSAGES that may affect your decision whether to say YES or NO to participation in this research, and to record the consent of those who say YES.

RESEARCHERS

Principal Investigator

Kristin Heron, Ph.D.
Assistant Professor
Old Dominion University
Psychology Department

Student Investigator

Jacqueline Haywood, M.S. (Ph.D. student in the Virginia Consortium Program in Clinical Psychology)
Old Dominion University
Psychology Department

Additional Faculty Investigator

Desideria S. Hacker, Ph.D.
Assistant Dean
School of Graduate Studies and Research
Norfolk State University

DESCRIPTION OF RESEARCH STUDY

Several studies have been conducted looking into the subject of sexual risk behavior; however, there have been no studies which have focused on understanding how parental rearing and parental communication about sex influence the relationships between permissive sex messages (peer and social media) and risky sexual behavior. This study will potentially aid in creating a program that can help decrease risky sexual behavior among young adult African American students.

If you decide to participate, then you will join a study involving research of your thoughts, behaviors, and feelings regarding your social media usage, religiosity, sexual communication history, and parental relationship while growing up.

By clicking NEXT you agree to participate in the study you acknowledge that you understand what is involved, as described above. The questionnaire should take between 15-30 minutes to

complete. Approximately 300 African American students over the age of 18 will be participating in this study.

EXCLUSIONARY CRITERIA

You should be at least 18 years or older and self-identify as African American to participate in the current study. If you are not 18 years of age, or are not African American you should NOT participate in the current study. If you are younger than 18 years old, please EXIT the survey now. If you do not identify your race as African American, please EXIT the survey now.

RISKS AND BENEFITS

RISKS: If you decide to participate in this study, then you may face a risk of disclosing sensitive information that may cause you some discomfort. The researchers tried to reduce these risks by removing all linking identifiers. And, as with any research, there is some possibility that you may be subject to risks that have not yet been identified. If you experience distress, you may stop the study and resume the survey at a later time if you wish. In order to reduce risk of distress related to completing the survey, you will be provided with mental health resources below and at the end of the survey. If you have any questions about the study, you can contact Dr. Kristin Heron at 757-683-5214. If you would like to talk to a professional about any concerns you may have, you can contact the ODU Counseling Center at 757-683-4401.

BENEFITS: The main benefit to you for participating in this study is that the research findings may aid in identifying factors that contribute to risky sexual behavior of African American students. As a result, this study may help researchers identify the need for tailored sexual health programs for the ODU community. No other benefits are expected from your participation in the study.

COSTS AND PAYMENTS

The researchers want your decision about participating in this study to be absolutely voluntary. Yet they recognize that your participation includes a brief time commitment, which can be an inconvenience. In order to show their appreciation for your completion of the survey you will receive 0.5 psychology research credits through SONA for your completed participation. The researchers are unable to give you any financial payment for participating in this study.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY

This survey is anonymous; your identity will not be linked with your responses in any way. You will be asked to provide your SONA ID at the end of the survey to receive credit, but the investigators will not be able to link your SONA ID to the information you provide in the survey. The results of this study will be used in a dissertation project, and possibly presentations, and publications, but the researchers will not identify you specifically in any of these documents.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, injury, or illness arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in this study please contact Kristin Heron, Ph.D., the Principal Investigator, at kheron@odu.edu or 757-683-5412. Additionally, if you should suffer injury from any research project you may contact Dr. George Maihafer the current IRB chair at 757-683-4520 at Old Dominion University, or the Old Dominion University Office of Research at 757-683-3460 who will be glad to review the matter with you.

VOLUNTARY CONSENT

Because this is an online survey, by continuing to the next page you are saying that you have read the above information and that you understand this form, the research study, and its risks and benefits. If you have any questions about participating in this study now or in the future, please contact the Principal Investigator, Kristin Heron, Ph.D. at kheron@odu.edu or 757-683-4439, the Student Investigator, Jacqueline Haywood, M.S. at jhayw007@odu.edu, or the additional Faculty Investigator, Desi Hacker, Ph.D. at dshacker@nsu.edu.

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. George Maihafer, the current IRB chair, at 757-683-4520, or the Old Dominion University Office of Research, at 757-683-3460.

By continuing to the next page, you are telling the researchers YES, you agree to participate in this study. If you decide that you want to volunteer to complete this survey, please click **NEXT**. If you do not agree to participate please exit the survey.

APPENDIX B

**Department of Psychology
Norfolk State University**

PROJECT SEX MESSAGES

INFORMED CONSENT FORM FOR PARTICIPANTS

The purpose of this form is to give you information pertaining to your voluntary participation in the research project described below, and to record the consent of participating individuals. Please take your time before making a decision to take part in this research study. It is important that you thoroughly read the consent form that describes the study. If you have questions regarding the consent or need further explanation of any information that is not clearly understandable to you, please feel free to contact the study researchers (contact information located below).

DESCRIPTION OF THE STUDY

This research focuses on a combination of factors that contribute to sexual practices among African American students attending NSU. Identifying these factors will potentially aid in creating a program that can help decrease risky sexual behavior among young adult students.

WHAT WILL THE STUDY INVOLVE

The study will involve an online survey that consists of questions that ask about your background as well as your thoughts, behaviors, and feelings regarding your social media usage, religiosity, sexual communication history, and parental relationship while growing up. The survey will take approximately 15 to 35 minutes. To be eligible for this study you must be at least 18 years of age or older, self-identify as African American, and be a student at Norfolk State University.

RISKS

The information covered in this survey may be sensitive to some individuals. The researchers do not see any additional risks for participating in this study.

BENEFITS

This research may aid in identifying factors that contribute to risky sexual behavior of African American students. As a result, this study may help researchers identify the need for tailored sexual health programs for the NSU community. No other benefits are expected from your participation in the study.

COST, REIMBURSEMENT AND COMPENSATION

Students can elect to be entered in a random drawing for two \$50 gift cards.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will make this available to you.

ANONYMITY

All information obtained in this study is strictly anonymous. The researcher will take reasonable steps to keep your information private. For example, the researcher will remove any identifiers from the information you provide. All results of this study will be used in a dissertation project, and possibly used for presentations and publications.

WITHDRAWAL AT WILL

If you decide now or at any other point to withdraw this consent or stop participating, you are free to do so at no penalty to yourself. The researcher reserves the right to withdraw your participation in this study, at any time, if any potential problems with your continued participation are observed.

WHAT IF THERE IS A PROBLEM

If there are any concerns or questions regarding the treatment of participants, please contact Dr. Rowena Wilson, Human Subjects Institutional Review Board, Chair, (757) 823-9053.

FURTHER INQUIRIES

If you need any further information, you can contact Jacqueline Haywood at j.haywood@spartans.nsu.edu or Dr. Desideria Hacker at dshacker@nsu.edu.

RESEARCHERS

Faculty Supervisor

Dr. Desideria S. Hacker, Ph.D.
Norfolk State University,
School of Graduate Studies and Research

Student Investigator

Jacqueline Haywood, M.S. (Ph.D. student in the Virginia Consortium Program in Clinical Psychology)
Norfolk State University
Psychology Department

If you agree to take part in the study, please select the “I Agree” box. By selecting, you are indicating YES I am acknowledging that I have read this page and the last several pages and agree to all indicated terms.

(Please select one box)

I Agree ☐

I Do Not Agree ☐

APPENDIX C

Demographics and Additional Information Questionnaire (created for the purpose of this study)

1. What is your age?

[Open ended]

2. What is your gender?

☐ Male

☐ Female

☐ Transgender

☐ Male to Female

☐ Female to Male

3. What is your sexual orientation?

☐ Heterosexual (Straight)

☐ Homosexual (Lesbian or Gay)

☐ Bisexual

☐ Unsure/ Questioning

☐ Other [open ended]

4. What is your race/ethnicity?

{Choose one}

☐ African American

☐ Asian American

☐ Hispanic or Latino/Latina

☐ European American

☐ Pacific Islander

☐ Other [open ended]

5. What is your year in school?

{Choose one}

☐ Freshman

☐ Sophomore

☐ Junior

☐ Senior

☐ Graduate Student

6. What is your current relationship status?

{Choose one}

☐ Married/Civil Union

☐ Divorced

☐ Separated

☐ In a relationship living with partner

- ☐ A monogamous relationship
- ☐ A non-monogamous relationship
- ☐ In a relationship not living with partner
- ☐ A monogamous relationship
- ☐ A non-monogamous relationship
- ☐ Single (never married)

7. Please provide an estimate of your family's income in the past year.

{ Choose one }

- ☐ \$10,000 - 20,000
- ☐ \$20,000 - 60,000
- ☐ \$60,000 - 90,000
- ☐ \$90,000 - 110,000
- ☐ \$110,000 and above

8. For your **mother**, please indicate her level of education.

{ Choose one }

- ☐ Some High School
- ☐ High School
- ☐ Some College
- ☐ College
- ☐ Some Graduate School
- ☐ Graduate School
- ☐ Not Sure

9. For your **father**, please indicate his level of education.

{ Choose one }

- ☐ Some High School
- ☐ High School
- ☐ Some College
- ☐ College
- ☐ Some Graduate School
- ☐ Graduate School
- ☐ Not Sure

10. Please indicate who raised you.

{ Check all that apply }

- ☐ Both Biological Parents
- ☐ Single Biological Parent
 - ☐ Mother
 - ☐ Father
- ☐ Other [Open Ended Please indicate i.e., step, adoptive, foster parent(s), grandparent(s)]

11. Who was the sex educator in your home? Meaning the person that taught you the most about sex and sexual relationships.

{ Choose one }

- ☐ Sibling
- ☐ Mother
- ☐ Father
- ☐ Grandparent
- ☐ Other [open ended]
- ☐ None of the above ever talked to me about sex

12. Did anyone else talk to you about sex in the home?

{ Check all that apply }

- ☐ Sibling
- ☐ Mother
- ☐ Father
- ☐ Grandparent
- ☐ Other [open ended]
- ☐ No one else talked to me about sex

13. Who do you feel is **most responsible** for the information you have learned about sex and sexual relationships?

{ Choose all that apply }

- ☐ My Peers (including close friends and associates)
- ☐ My Parent(s)
- ☐ My Parental Figure(s) (including those who raised you other than parents)
- ☐ The Media (including music, television, movies, magazines, the internet)
- ☐ Social Media (including Facebook, Instagram, Twitter, Snapchat, etc.)
- ☐ None of the above

14. Are you a member of a Greek Fraternity or Sorority?

- ☐ Yes
- ☐ No

For the next several questions sexual behavior refers to *oral sex*, *anal sex*, or *vaginal sex*. Please review the descriptions below before answering the next set of questions. If you have never engaged in a sexual behavior please respond no to the next question.

Vaginal sex: When a male inserts his penis into his female partner's vagina, the partners are considered to be having vaginal sex.

Oral sex: When one partner's mouth is in contact with the other partner's genitals (penis or vagina) or anus during sex, the partners are considered to be having oral sex.

Anal sex: When a male's penis is inserted into his male or female partner's anus, the partners are considered to be having anal sex.

Sexual partners: A sexual partner is someone with whom you have sex, that is, engage in a sexual behavior.

Protected sex and Unprotected sex: Protected sex is when a latex or polyurethane condom (rubber) is used to cover the penis; a female condom is used to cover the vagina; or a dental dam is used to cover the anus or vagina. By unprotected sex, we mean vaginal, oral, or anal sex without a barrier such as a condom or dental dam.

15. Have you ever had sex (vaginal, oral, or anal)?

☐ Yes

☐ No

16. What was your age the first time a sexual behavior occurred? [Open Ended]

17. How many sexual partners have you had in your lifetime?

☐ 1 person

☐ 2 people

☐ 3 to 5 people

☐ 6 to 9 people

☐ 10 or more people

18. Are you

{Check all that apply}

☐ A woman who has had sex with men

☐ A woman who has had sex with women

☐ A woman who has had sex with men and women

☐ A man who has had sex with women

☐ A man who has had sex with men

☐ A man who has had sex with men and women

For the next several questions be sure to reflect on the ***past 3 months only***.

19. In the past 3 months, how many partners have you had sex with?

☐ None

☐ 1 person

☐ 2 people

☐ 3 to 5 people

☐ 6 to 9 people

☐ 10 or more people

20. In the past 3 months, how many times have you had vaginal intercourse without a condom?

☐ 0 times

☐ 1 to 2 times

☐ 3 to 6 time

☐ 6 to 9 times

☐ 10 or more times

21. In the past 3 months, how many times have you given or received fellatio (oral sex on a man) without a condom?

- ☐ 0 times
- ☐ 1 to 2 times
- ☐ 3 to 6 time
- ☐ 6 to 9 times
- ☐ 10 or more times

22. In the past 3 months, how many times have you given or received cunnilingus (oral sex on a woman) without a dental dam?

- ☐ 0 times
- ☐ 1 to 2 times
- ☐ 3 to 6 time
- ☐ 6 to 9 times
- ☐ 10 or more times

23. In the past 3 months, how many times have you had anal sex without a condom?

- ☐ 0 times
- ☐ 1 to 2 times
- ☐ 3 to 6 time
- ☐ 6 to 9 times
- ☐ 10 or more times

24. In the past 3 months, how many times have you had sex with someone you don't know well or just met?

- ☐ 0 times
- ☐ 1 to 2 times
- ☐ 3 to 6 time
- ☐ 6 to 9 times
- ☐ 10 or more times

25. Have you ever been tested for any sexually transmitted infections (e.g., gonorrhea, chlamydia, syphilis, herpes, etc.)

- ☐ Yes
- ☐ No

26. Have you ever had a sexually transmitted infection (e.g., gonorrhea, chlamydia, syphilis, herpes, etc.)

- ☐ Yes
- ☐ No

27. Have you ever been tested for HIV (Human Immunodeficiency Virus)?

- ☐ Yes
- ☐ No

28. Do you use any of following social networking sites?

{ Check all that apply }

- ☐ Facebook
- ☐ Instagram
- ☐ Twitter
- ☐ Snapchat
- ☐ Kik
- ☐ Other [Please indicate/open ended]
- ☐ I do not use social media

29. Which of the following do you use **most frequently**?

{ Check all that apply }

- ☐ Facebook
- ☐ Instagram
- ☐ Twitter
- ☐ Snapchat
- ☐ Kik
- ☐ Other [Please indicate/open ended]

30. The people I follow on social media think it is cool to post pictures of themselves where they are either scantily dressed or insinuating sex.

{ Choose one }

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Strongly agree

APPENDIX D

Facebook Intensity Scale (FBI) *Modified for Social Media Sites* (FBI; Ellison, Steinfield, & Lampe, 2007)

Directions: Please read each statement and respond by indicating *your* feelings and behaviors related to the social media site you use *most often* (e.g., **Facebook, Instagram, Snapchat, Twitter, Kik, etc.**). Also, please *mentally insert* the social media site you use most often into the blank spaces in the sentences below.

Select only one response for each statement that does not require you to add a quantity.

1 (*Strongly Disagree*) 2 (*Disagree*) 3 (*Agree*) 4 (*Strongly Agree*)

1. _____ is part of my everyday activity.
2. I am proud to tell people I'm on _____.
3. _____ has become part of my daily routine.
4. I feel out of touch when I haven't logged onto _____ for a while.
5. I feel I am part of the _____ community.
6. I would be sorry if _____ shut down.

For the next question, please use the scale below.

1 (*10 or fewer*) **2** (*11-50*) **3** (*51-100*) **4** (*101-150*) **5** (*151-200*) **6** (*201-250*) **7** (*251-300*) **8** (*301-400*) **9** (*more than 400*).

7. Approximately how many TOTAL people do you follow/friend on _____?

For the next question, please use the scale below.

1 (*less than 10 minutes*) **2** (*10–30 minutes*) **3** (*31–60 minutes*) **4** (*1–2 hours*) **5** (*2–3 hours*) **6** (*more than 3 hours*)

8. In the past week, on average, approximately how much time PER DAY have you spent actively using _____?

APPENDIX E

The Religious Commitment Inventory-10 (RCI-10; Worthington et al., 2012)

Directions: For the statements below please rate how true each statement is to you. Select only one response for each statement.

1 (*Not at all true of me*) 2 (*Somewhat true of me*) 3 (*Moderately true of me*) 4 (*Totally true of me*)

1. I often read books and magazines about my faith.
2. I make financial contributions to my religious organization.
3. I spend time trying to grow in understanding of my faith.
4. Religion is especially important to me because it answers many questions about the meaning of life.
5. My religious beliefs lie behind my whole approach to life.
6. I enjoy spending time with others of my religious affiliation.
7. Religious beliefs influence all my dealings in life.
8. It is important to me to spend periods of time in private religious thought and reflection.
9. I enjoy working in the activities of my religious affiliation.
10. I keep well informed about my local religious group and have some influence in its decisions.

APPENDIX F

Parent-Teen Sexual Risk Communication Scale (PTSRC-III; Hutchinson, 2007)

Did you have a mother or a mother-like adult figure in your life while growing up?

☐ Yes

☐ No

[If yes, move to question about mother below]

Did you have a father or a father-like adult figure in your life while growing up?

☐ Yes

☐ No

[If yes, move to question about father below]

Note: Presented measures so that questions were answered separately for mother's and father's communication.

Directions: Please use the scale below to indicate the amount of communication you received about a specific topic for the following questions. Mother (or father) may refer to a biological parent, stepparent, guardian, or other female (or male) parent like adult.

1 (*Nothing*) 2 (*Very Little*) 3 (*Some*) 4 (*A lot*) 5 (*Everything*)

Between the ages of 10 and 18, how much information did your mother give you about...

Birth Control

STDs

HIV/AIDS

Condoms

How to protect yourself from HIV/AIDS

Postponing or not having sex

Peer pressure to have sex

How to handle sexual pressure

Between the ages of 10 and 18, how much information did your father give you about...

Birth Control

STDs

HIV/AIDS

Condoms

How to protect yourself from HIV/AIDS

Postponing or not having sex

Peer pressure to have sex

How to handle sexual pressure

APPENDIX G

My Memories for Upbringing (s-EMBU; Arrindell et al., 1999)

Note: Presented measure so that questions were answered separately for mother's and father's behaviors.

Directions: Below are questions concerning your childhood. Even though it is difficult to recall exactly how our parents behaved towards us when we were young, each of us has certain memories of what principles our parent(s) used in our upbringing. When answering the following questions please try to remember your mother or father's behavior towards you as you yourself experienced it. Circle the responses applicable to your mother or father's behavior. Mother or father may refer to a biological or adoptive parent. Certain questions are impossible to answer if you do not have any sisters or brothers so please leave them blank. Please use the rating scale below.

1 (*No, never*) 2 (*Yes, but seldom*) 3 (*Yes, often*) 4 (*Yes, most of the time*)

1. It happened that my mother was sour or angry with me without letting me know the cause.
- *2. My mother praised me.
3. It happened that I wished my mother would worry less about what I was doing.
4. It happened that my mother gave me more corporal punishment than I deserved.
5. When I came home, I then had to account for what I had been doing, to my mother.
- *6. It think that my mother tried to make my adolescence stimulating, interesting and instructive (for instance by giving me good books, arranging for me to go on camps, taking me to clubs).
7. My mother criticized me and told me how lazy and useless I was in front of others.
8. It happened that my mother forbade me to do things other children were allowed to do because they were afraid that something might happen to me.
9. My mother tried to spur me to become the best.
10. My mother would look sad or in some other way show that I had behaved badly so that I got real feelings of guilt.
11. I think that my mother's anxiety that something might happen to me was exaggerated.
- *12. If things went badly for me, I then felt that my mother tried to comfort and encourage me.
13. I was treated as the "black sheep" or "scapegoat" of the family.
- *14. My mother showed with words and gestures that she liked me.
15. I felt that my mother liked my brother's and/or sister's more than they liked me.
16. My mother treated me in such a way that I felt ashamed.
17. I was allowed to go where I liked without my mother caring too much.
18. I felt that my mother interfered with everything I did.
- *19. I felt that warmth and tenderness existed between me and my mother.
20. My mother put decisive limits for what I was and was not allowed to do, to which she then adhered rigorously.
21. My mother would punish me hard, even for trifles (small offenses).
22. My mother wanted to decide how I should be dressed or how I should look.
- *23. I felt that my mother was proud when I succeeded in something I had undertaken.

***Emotional Warmth Subscale**

APPENDIX H

Sexual Socialization Instrument (SSI; Lottes & Kuriloff, 1994)

Directions: Please rate your agreement/disagreement with the following statements based on the scale below. Select only one response for each statement.

1 (*Strongly Agree*) 2 (*Agree*) 3 (*Undecided*) 4 (*Disagree*) 5 (*Strongly Disagree*)

1. I am uncomfortable around people who spend much of their time talking about their sexual experiences.
- *2. Among my friends, men who have the most sexual experience are the most highly regarded.
3. My friends disapprove with being involved with someone who was known to be sexually easy.
4. Most of my friends don't approve of having multiple sex partners.
- *5. My friends and I enjoy telling each other about our sexual experiences.
6. Most of my friends believe that you should only have sex in a serious relationship.
- *7. Among my friends alcohol is used to get someone to sleep with you.
- *8. My friends approve of being involved with someone just for sex.
- *9. My friends brag about their sexual exploits.
- *10. My friends suggest dates to each other who are known to be sexually easy.
11. Among my friends, people seldom discuss their sexuality.
- *12. Among my friends, women who have the most sexual experience are the most highly regarded.

***Reverse scored**

APPENDIX I

Social Media Sexual Messages (Epstein & Ward, 2008)

Directions: Please indicate *how strongly* each statement below has been communicated to you through online **social media** (e.g., Facebook friends, or Instagram or Twitter followers, etc.).

0 (*None/Nothing*) 1 (*A little*) 2 (*Some*) 3 (*A Lot*)

1. In dating, the goal for men is to “score” with as many women as they can.
2. Men want as much as they can get on a first date.
3. Men are most interested in women as potential sex partners and don’t want to be “just friends”.
4. It’s difficult for men to resist their sexual urges.
5. Men think about sex all the time.
6. Men want sex, women want relationships.
7. It’s up to women to limit sexual advances of men and to keep men from “going too far”.
8. It is worse for a woman to sleep around than it is for a man.
9. Sex is best when the partners are in a loving and committed relationship.
10. Partners should be intellectually and emotionally intimate before physical intimacy.
11. Sex should be a deep and beautiful expression of love between two people.
12. The decision to have sex is serious and should not be taken lightly.
13. Making love is different from having sex.
14. Romantic/sexual relationships are best when they start out as friendships.
- *15. Having sex should be viewed as just a normal part of dating relationships.
- *16. College is a time for sexual exploration.
- *17. Having a “one-night stand” is okay as long as both partners agree that’s all it is.
- *18. Having sex is just something fun to do.
- *19. No sexual act should be considered immoral as long as both are consenting adults.
- *20. It is better for men and women to have diverse sexual experiences before marriage.
- *21. Having sex should not necessarily imply your commitment to that person.
- *22. Sex outside of marriage is fine as long as protection is used to prevent AIDS, STDs, & pregnancy.
23. Sex outside of marriage is a sin.
24. You should abstain from sex until marriage to avoid getting (someone) pregnant.
25. A woman should not live with a man outside of marriage; after all, why would he want to marry her when he gets all of the perks (i.e. sex) already?
26. People who have sex before marriage typically regret it later.
27. Sex belongs only in married relationships.
28. No matter what she does professionally, a woman isn’t a success until she’s found a man
29. A woman should do whatever she needs to (e.g. use make-up, buy attractive clothes, work out) to look good enough to attract a man
30. Men should be the initiators and should be the ones to ask women out
31. It is not feminine for a woman to be too interested in sex or to plan for sex
32. Better for a woman to use “feminine charm” to indicate interest than to express it directly.
33. A woman should not be too friendly or available but should play “hard to get”.

***Sexual Freedom Subscale**

APPENDIX J

Safe Sex Behavior Questionnaire (SSBQ; DiIorio et al., 1992)

Directions: Below is a list of sexual practices. Please read each statement and respond by indicating **your degree of use of these practices**. Select only one response for each statement.

1 (*Never*) 2 (*Sometimes*) 3 (*Most of the Time*) 4 (*Always*)

1. I insist on condom use when I have sexual intercourse.
 - *2. I use cocaine or other drugs (e.g., marijuana) prior to or during sexual intercourse.
 3. I stop foreplay long enough to put on a condom (or for my partner to put on a condom).
 4. I ask potential sexual partners about their sexual histories.
 5. I avoid direct contact with my sexual partner's semen or vaginal secretions.
 6. I ask my potential sexual partners about a history of bisexual/homosexual practices.
 - *7. I engage in sexual intercourse on a first date.
 8. I abstain from sexual intercourse when I do not know my partner's sexual history.
 9. I avoid sexual intercourse when I have sores or irritation in my genital area.
 10. If I know an encounter may lead to sexual intercourse, I carry a condom with me.
 11. I insist on examining my sexual partner for sores, cuts, or abrasions in the genital area.
 12. If I disagree with information that my partner presents on safer sex practices, I state my point of view.
 - *13. I engage in oral sex without using protective barriers such as a condom or rubber dam.
 - *14. If swept away in the passion of the moment, I have sexual intercourse without using a condom.
 - *15. I engage in anal intercourse.
 16. I ask my potential sexual partners about a history of IV drug use.
 17. If I know an encounter may lead to sexual intercourse, I have a mental plan to practice sex safe.
 18. If my partner insists on sexual intercourse without a condom, I refuse to have sexual intercourse.
 19. I avoid direct contact with my sexual partner's blood.
 - *20. It is difficult for me to discuss sexual issues with my sexual partner.
 21. I initiate the topic of safer sex with my potential sexual partner.
 - *22. I have sexual intercourse with someone who I know is a bisexual or gay person.
 - *23. I engage in anal intercourse without using a condom.
 - *24. I drink alcoholic beverages prior to or during sexual intercourse.
- *Reverse scored**

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Bachelor of Science in Psychology **08/04- 08/08**

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Interprofessional Track Position

APA-Accredited Internship

SELECTED RESEARCH

Hacker, D. S., **Haywood, J. E.**, Maduro, R. S. , Mason, T. B., Derlega, V. J., Socha, T. J. (2016). How Prior Experiences with Racism Predict African American Students' Reactions to the George Zimmerman Trial: Co-Rumination and Thought Intrusions as Mediators. *Journal of Trauma & Loss*.

Haywood, J. E., Hacker, D. S., Derlega, V. J., Maduro, R. S., & Mason, T. B. (2015, May). Co-Rumination and Thought Intrusions are Associated with African American Students' Negative Affective Reactions to the George Zimmerman Trial. Poster presentation at the Twenty-Seventh Association for Psychological Science Annual Convention, New York, NY.

Haywood, J., Hacker, D., & Paulson, J. (2017, May). Protective Factors Against African American Emerging Adult Students' Risky Sexual Behaviors. Poster presentation at the Twenty-Ninth Association for Psychological Science Annual Convention, Boston, MA.

Mason, T. B., Maduro, R. S., Derlega, V. J., Hacker, D. S., Winstead, B. A., & **Haywood, J. E.** (2016). Individual Differences in the Impact of Vicarious Racism: African American Students React to the George Zimmerman Trial. *Cultural Diversity and Ethnic Minority Psychology*.